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Table 1

Japan's external balance sheet

billions of dollars, at end of year

	1985	*1986*	*1987*	*1988*
Total assets	438	727	1072	1469
Long-term	301	476	646	833
Private sector	264	425	565	728
Securities	146	258	340	427
Direct investment	44	58	77	111
Short-term	136	251	425	637
Banks	100	195	320	502
Total liabilities	308	547	831	1178
Long-term	122	192	236	312
Private sector	92	152	179	268
Securities	85	144	166	255
Short-term	186	355	595	866
Banks	177	322	530	765
Net assets	130	180	241	292
Private sector	104	139	146	148
Long-term	173	273	386	460
Short-term	—68	—134	—240	—312
Banks	—61	—127	—210	—263
Government sector	25	42	94	144
Reserves	28	43	82	98

Japan: the world's leading foreign investor

Japan has become the world's largest source of cross-border investment, and is likely to remain so for some time. By the end of 1988, its residents had accumulated net external assets of more than $290 billion, up from less than $30 billion at the start of the 1980s (see Table 1). Japan's net foreign assets exceed those of any other country in absolute terms, although on a per capita basis they still lag those of the United Kingdom, Germany, the Netherlands, and a few low-population countries on the Arabian Peninsula.

Underlying Japan's rapid accumulation of overseas assets has been the emergence of a large excess of domestic savings over domestic investment and consequent current account surpluses, which amounted to nearly $360 billion during 1980-88. This year the surplus should narrow to about $66 billion, compared with a peak of $87 billion in 1987 (see Table 2). This could boost Japan's net external assets to more than $350 billion by the end of this year, excluding possible valuation changes.*

Japan's role as an international investor and its influence in foreign markets are much greater than implied by growth in the nation's net external assets. In addition to residents investing their excess domestic savings abroad and accumulating net foreign assets, financial institutions in Japan, especially banks, have become major international intermediaries, taking funds from nonresidents, chiefly in the interbank market, and relending and investing them overseas, or financing the acquisition of foreign assets by other Japanese residents. On a smaller scale, Japanese nonfinancial entities engage in sizable borrowing abroad, mainly through the issuance of external bonds and other marketable instruments, and use part of the proceeds to finance their direct and portfolio invest-

*Changes in Japan's external balance sheet correspond only loosely to balance of payments inflows and outflows because the amounts of outstanding foreign assets and liabilities undergo major valuation changes: for example, depreciation of the dollar against the yen and other major currencies raises the dollar value of Japan's liabilities more than that of its assets because the amount of liabilities denominated in yen and other nondollar currencies exceeds the volume of assets denominated in these currencies. Also, the sharp rise in Japanese stock prices caused a $36 billion increase in the value of foreign holdings of Japanese equities (which are Japanese liabilities) in 1988 alone.

Table 2

Japan's trade and current account surpluses

billions of dollars

	*Trade surplus**		*Current account surplus*	
	Total	*With United States*	*Total*	*With United States*
1985	46	39	49	42
1986	83	51	86	54
1987	80	52	87	57
1988	78	48	80	51
*1989***	71	46	66	50
*1990***	73	48	66	52

*Customs clearance basis.
**Projected.

ment overseas.

This combination of international intermediation and deployment of excess domestic savings led to the extraordinary rise in Japan's gross foreign assets to nearly $1.5 trillion at the end of 1988 from only $135 billion at the beginning of the 1980s. Close to half these gross assets were held by banks. Reflecting its international intermediary role, Japan's gross foreign liabilities reached almost $1.2 billion at the end of last year, two-thirds of which were on the balance sheets of Japanese banks.

The surge in Japanese foreign investment followed enactment of the landmark 1980 foreign exchange law which for the first time allowed Japanese investors to acquire foreign assets relatively freely. Interacting with macroeconomic shifts that upset the savings-investment balance in both Japan and the United States, the newly unleashed Japanese interest in investing overseas was one of the factors that strengthened the dollar in the early 1980s and contributed to the dramatic rise in Japan's current account surplus. Japanese private-sector annual net purchases of foreign securities, mostly bonds and a large portion of those dollar-denominated, rose from less than $19 billion to more than $100 billion in 1986 (see Table 3). Net additions to Japanese private-sector portfolios of long-term foreign securities moderated to an average of $87 billion during the next two years. At the same time, Japanese direct investment abroad took off, reaching $34 billion in 1988, up from an average of less than $5 billion annually in the first half of the 1980s. By the end of 1988, the private sector's gross long-term assets were valued at about $730 billion, nearly three-fifths of which consisted of foreign securities. Another 15%, or about $110 billion, represented the book value of direct investment abroad. The government sector held more than $200 billion of foreign assets at the end of last year, split about evenly between reserves and other assets, mostly subscriptions to international institutions and long-term loans.

Japan's foreign assets should continue to grow rapidly for several years to come. The macroeconomic underpinnings of the nation's large current account surpluses are unlikely to change quickly. The pattern of long-term capital flows so far this year suggests the trends evident in the past few years are continuing, with net purchases of foreign securities running at an annual rate of close to $100 billion in the first three quarters of 1989, and the rate of Japanese direct investment flows abroad topping $40 billion. Although some major Japanese financial institutions may not continue to diversify their portfolios internationally as rapidly as they did earlier in the 1980s, they could still be very

Table 3

*Japan's capital account**

billions of dollars

	1985	*1986*	*1987*	*1988*	*1989***
Current account surplus	49	86	87	80	60
Long-term capital account	—65	—131	—137	—131	—76
Japanese investment abroad	—82	—132	—133	—150	—170
Securities	—60	—102	—88	—87	—100
Bonds	—59	—95	—71	—84	—87
Equities	—1	—7	—17	—3	—14
Direct investment	—6	—14	—20	—34	—41
Loans	—10	—9	—16	—15	—19
Foreign investment in Japan	17	1	—4	19	94
Short-term capital account	12	58	93	65	23
Banks	13	60	69	45	—10
Other	—1	—2	24	20	33
Official reserves	0	—16	—39	—16	15

*Minus sign denotes net outflow of capital (an increase in net foreign assets).
**January-September 1989 at an annual rate.

Table 4

Total assets and foreign securities holdings of Japanese financial institutions

December 31, 1988

	Trillions of yen	*Billions of dollars*
Banks		
Total assets	582.05	4623.10
Foreign securities	11.97	95.07
Life insurance companies		
Total assets	92.46	734.36
Foreign securities	13.09	103.94
Postal life insurance		
Total assets	39.93	317.18
Foreign securities	2.24	17.79
Casualty insurance companies		
Total assets	19.64	155.96
Foreign securities	2.05	16.25
Securities investment trust companies		
Total assets	52.71	418.67
Foreign securities	4.78	38.00
Other trust accounts		
Total assets	114.39	908.55
Foreign securities	8.17	64.88
Norinchukin Bank		
Total assets	27.62	219.37
Foreign securities	2.03	16.14

large net buyers of foreign assets since their total assets may grow as much as 10%-20% a year. The dollar share of total portfolios may ebb, but will still leave room for a substantial increase in Japan's dollar-denominated holdings over coming years. There is, however, some risk that current yen weakness could lead to larger Japanese trade surpluses in the future. These surpluses could exceed private-sector investors' appetite for new overseas assets, particularly if resolution of domestic political uncertainties, in combination with strong domestic economic fundamentals, leads to a shift in sentiment toward yen assets. This could set the stage for another period of yen appreciation against the dollar.

Foreign securities investments

Foreign securities purchases by Japanese investors are credited with greatly influencing the international bond market as well as various national markets, including that for U.S. Treasury securities. Japanese net purchases have been concentrated in interest-bearing securities, with equities accounting for only about 15% of total net acquisitions of foreign securities during the past five years. Last year, following the October 1987 stock market crash, Japanese residents made $87 billion of net purchases, only $3 billion of which consisted of equities. However, in the first three quarters of this year net new investment in foreign equities rose to $14 billion, out of total foreign securities purchases of $100 billion, both at annual rates.

Japan's main securities investors are banks and other major financial institutions. Their acquisitions of foreign securities typically account for about 60% of total Japanese net purchases. The remainder are attributed to a residual category that includes nonfinancial corporations and individuals, on which detailed data are not available.

Banks held $95 billion in overseas securities at the end of 1988 (see Table 4). Their net purchases slowed to only $3.5 billion last year, but in the first eight months of 1989 banks added to their holdings at an annual rate of more than $16 billion (see Table 5). However, foreign securities account for only 2% of the banks' total assets (see Table 6). Banks in Japan operate under restrictions that limit their overall net exposure in foreign currencies. Thus, on the margin, their purchases of nonyen bonds must be financed with nonyen liabilities, which makes interest rate spreads and the shape of yield curves key determinants of their securities investment decisions. The flat-to-inverse yield curves prevailing in a number of overseas markets over much of 1988 and 1989 reduced the attractiveness to banks of purchasing fixed-rate foreign currency bonds

Table 5

Japanese net purchases of foreign securities by type of investor

*annual flows, in billions of dollars**

	1985	*1986*	*1987*	*1988*	*1989***
Banks (banking accounts)	13.8	15.0	7.8	3.5	16.6
Life insurance companies	3.9	15.0	21.0	21.4	24.5
Postal life insurance	1.6	3.1	3.5	2.1	1.6
Securities investment trust companies	3.3	13.5	1.6	5.0	0.1
Other trust accounts	8.5	16.3	11.5	2.3	11.7
Norinchukin Bank	2.4	4.0	—0.1	3.3	3.4
Other reporting financial institutions	2.8	3.4	2.4	6.0	10.2
Unidentified investors (residual)	23.5	31.7	40.2	43.3	31.9
All residents	59.8	102.0	87.9	86.9	100.0

*Yen flows converted at period average dollar-yen exchange rate.
**Annualized flows based on six to nine months of data, depending on investor.

Table 6

Foreign securities holdings of Japanese financial institutions

data are for year-end

	As percent of total securities holdings		As percent of total assets	
	1980	*1988*	*1980*	*1988*
Banks (banking accounts)	2	12	0	2
Life insurance companies	9	31	3	14
Postal life insurance	0	11	0	6
Securities investment trust companies	2	14	2	9
Other trust accounts	2	15	0	7

funded by short-term foreign currency borrowing. More recently, however, the possibility of an economic slowdown and lower interest rates in the United States has enticed banks with the prospect of capital gains despite the inverted yield curve.

Most other institutional investors face much less binding constraints. The main nonbank institutional investors (life insurers, casualty insurers, the government-owned postal life insurance system, investment trusts, and other trust accounts including pension trusts) held $240 billion of foreign securities at the end of 1988. Relative returns and liquidity are the two dominant investment criteria, but with differing emphasis. Some players focus mainly on current yields, while others stress total returns, including foreign exchange and other capital gains or losses.

In 1988 life insurance companies added a record $21.4 billion in foreign securities, and their net purchases are running at a nearly $25 billion pace this year. These have come to account for 31% of their securities portfolios and 14% of total assets, far more than at most institutions. Adding foreign loans, real estate, and bank deposits takes their total foreign holdings somewhat closer to the 30% regulatory ceilings on foreign and foreign-currency assets as a share of life insurers' total portfolios (see Table 7).

Life insurers were among the main investors to benefit from the 1980 changes to Japan's foreign exchange laws. Their interest in foreign securities was enhanced by the rule limiting policy payouts to coupon and dividend payments, not capital gains. Japan's low inflation and accompanying low interest rates make it hard to obtain high current returns by investing in domestic yen credit markets, while most of the return on domestic equities comes in the form of capital appreciation, completely unavailable for direct policy payouts. However, if foreign currency securities offer a satisfactory total return, insurers can employ the higher coupons and dividend yields for policy payoffs. Capital gains realized on domestic equities can then be used to offset possible foreign exchange losses, which are settled in another part of a company's accounts. In fact, domestic bonds are so relatively unattractive that life insurers hold far more in foreign securities than they do in Japanese domestic government and corporate bonds. For over a year the government has been considering allowing insurers to include capital gains in policy payouts. This could reduce interest in the high-yielding foreign currencies — the U.S., Canadian, and Australian dollars, plus sterling — in which as much as 90% of the insurers' foreign currency bond portfolios are invested. Still, high-yielding instruments offer sizable compensation for the risks of an appreciating yen.

Life insurance companies, which already hold over $100 billion in foreign securities, will continue to invest more in such assets than any other category of institutional investor. They will continue to have high inflows of funds and need high returns to meet contractual obligations and compete with other asset managers. In addition to premium income on insurance policies, the life insurance companies will receive large inflows from corporate pension funds. Inflows will also come from public pension funds now that the Trust Fund

Table 7

*Key restrictions on foreign investments of Japanese investors**

	Percent of total assets	Remarks
Life insurance companies		
Foreign securities	30	A
Assets denominated in foreign currencies	30	B
*Real estate***	20	—
Loans to foreigners	10	—
Futures and options	—	C
Casualty insurance companies		
Foreign securities	30	A
Assets denominated in foreign currencies	30	B
*Real estate***	20	D
Loans to foreigners	10	
Futures and options	—	E
Postal life insurance		
Foreign securities	20	A,F
Pension trusts		
Assets denominated in foreign currencies	30	—
*Real estate***	20	—
Futures	—	G
Loan trusts	5	F
Tokkin	100	—
Money trusts (excluding tokkin)	5	F
Securities investment trusts		
Naigai funds		
Foreign securities	100	—
Futures	—	H
Other funds		
Foreign securities	50	—
Futures	—	H,J
Trust Fund Bureau		
Foreign bonds	10	K

*Some restrictions listed here are based on reports of administrative guidance.
**Domestic and foreign combined.

A Includes yen-denominated foreign securities.
B Includes deposits, CDs, CP, real estate, and sushi bonds (foreign-currency denominated issues by Japanese corporations).
C Hedging only; potential changes to allow unhedged positions.
D Restricted to 10% of assets if equity falls below certain standards.
E Hedging only.
F No equities.
G 50% or less of foreign currency assets.
H Sell contracts may not exceed face value of cash holdings.
J Combined cash and futures exposure to foreign securities cannot exceed 50% of total assets.
K Foreign governments and international organizations only.

Bureau of the Ministry of Finance and other public agencies are relinquishing control of part of the funds to private management. So even without raising the share of their portfolios placed overseas, life insurance companies could add $15-$20 billion annually to their foreign holdings over the next few years. And, if they were to raise the portion of their total assets invested abroad by a mere 1 percentage point, they would acquire an additional $7-$8 billion.

The postal life insurance system, a government institution known as Kanpo, became a heavy buyer of foreign securities during the mid-1980s, when the limit on its foreign currency bond holdings as a share of assets was raised to 10%. Yet, unlike the private insurers, its net purchases slowed noticeably during 1988 and 1989, leaving its foreign securities holdings at less than 6% of its total assets. Kanpo may have been influenced by earlier large capital losses stemming from yen appreciation. Though private insurers presumably experienced comparable losses in yen terms, Kanpo lacked offsetting capital gains from investments in the domestic stock market.

Securities investment trusts, which attracted attention in the spring of 1988 by making large purchases of dollar bonds when others were still nervous about the currency risk, face perhaps the lightest regulatory restrictions. One set of funds, called *naigai* funds because they can invest both at home and abroad, has no ceiling at all on foreign securities holdings, and therefore can move both sizably and speedily into foreign securities. Because these trusts are redeemable and designed for shorter horizons than those of life insurance policies and pension funds, their investments favor liquid instruments and maturities of up to five years or so — in other words, medium-term bonds and liquid equities. These trusts were major buyers of foreign securities, particularly dollar securities, earlier this year but more recently have been net sellers.

Trust accounts (other than investment trusts) slowed their net purchases of foreign securities in 1988 to only $2.3 billion, barely 15% of the $16.3 billion high set in 1986. They were, in fact, net sellers early this year. Pension trusts managed by trust banks have under one-sixth of their assets in foreign securities, plus some further fraction in foreign-currency deposits, well below a legal ceiling of 30%. Still, because their liabilities are largely yen-denominated, some pension accounts have laid a sizable bet on foreign assets. More important are loan trusts, the largest type of account managed by trust banks. Until last February, only 3% of loan-trust assets, along with those of certain money trusts, could be invested in foreign-currency bonds. The limit since has been raised to 5% of assets, adding over $6 billion to the trust banks' capacity for acquiring foreign securities in these accounts above and beyond what growth in total assets permits. Trust banks at first treated last spring's dollar strength as an opportunity to liquidate earlier holdings. However, they appear to have changed their view around May, with foreign bonds and stocks back in favor, particularly for pension accounts. In the four months ended in August, trust banks purchased around $9.5 billion in foreign securities for the

Chart 1

Japan: foreign securities purchases and the yen

various accounts they manage.

It is thought that trust banks, which at the end of 1988 had more than $900 billion in funds under management in various trust accounts, including some $65 billion in foreign securities, are likely to invest more heavily abroad than they have previously. They face an increasingly competitive environment as a consequence of deregulation and clients' desire for higher returns. In combination with total asset growth, currently running in excess of 15% per annum, this should keep trust accounts well up in the ranks of investors in foreign securities.

Two other major players — the central depositories for farm cooperatives (Norinchukin) and for shinkin banks (Zenshinren) — operate under rules similar to those for regular banks. Both institutions are relative newcomers to international investing. Each added over $2 billion to their foreign security holdings last year and have been sizable buyers so far in 1989.

The large net purchases of foreign securities by Japanese investors other than those reported by financial institutions — over $40 billion in each of the last two calendar years, and roughly $32 billion at an annual rate in the first nine months of 1989 — consist partly of acquisitions by individuals and nonfinancial corporations. Data covering the one thousand or so largest nonfinancial corporations in Japan, however, indicate they held only about $15 billion in foreign-currency bonds at the end of their latest fiscal year, despite their reputation for *zaitech* (financial engineering). The unidentified residual apparently also reflects differing asset classification and valuation practices as well as some underreporting by financial institutions.

Currency and market preferences

Currency fluctuations have been a major component of the overall returns realized by Japanese international portfolio investors, and probably will continue to be. The volume and pattern of Japanese net securities purchases abroad often appear to correlate closely with exchange rate expectations, particularly for the yen-dollar rate. Net purchases of foreign securities fell to relatively low levels in late 1987 and early 1988, when the yen's prospects seemed brightest against virtually all currencies, including the dollar, and the yen's later turnaround began with heavy foreign securities purchases between May and August 1988 (see Chart 1). Another slowdown in net buying in September last year appears to have contributed to the dollar's weakness at the time, but as sentiment toward the dollar grew more positive, particularly last spring, net purchases recovered. At times, the magnitude of the changes in Japanese investors' net securities purchases abroad in response to shifting exchange rate expectations seems to have been large enough to have been an important factor in the realization of those expectations.

Japanese investors also have shifted their preferences between the dollar and other currencies, as evidenced in the changing destinations of their securities investments over the last five years (see Table 8). However, even during the dollar's sharp depreciation from mid-1985 through early 1988, the United States consistently took the largest

Table 8

Geographic distribution of Japanese net purchases of foreign securities

as percent of total net purchases

	1985	1986	1987	1988	1st half 1989
United States	53	48	43	42	44
*Luxembourg**	21	24	30	29	32
United Kingdom	10	13	10	12	12
Germany	1	3	6	7	2
Canada	2	7	3	1	0
Australia	2	0	3	2	3
France	0	0	1	—0	3
*Others***	11	5	4	7	4

*Euromarket.
**Includes international institutions and unallocated.

share of Japan's overall foreign bond and equity investment. (The dominance of dollar-denominated purchases is even greater than evident from heavy investments in the United States since purchases in Luxembourg consist mainly of Eurodollar bonds, many of them convertible and warrant issues of Japanese companies.) This is not so surprising given the unrivaled breadth and depth of U.S. markets, especially for U.S. Treasury securities — key considerations given the scale of Japanese investment and the importance of liquidity for many investors, especially insurers mindful of the large withdrawals a major earthquake at home could require. These considerations suggest that foreign securities purchases by Japanese investors will continue to be concentrated in dollar-denominated instruments, even while these investors continue to participate in a widening range of markets.

High-yielding bond markets outside the United States have had particular appeal to Japanese investors. Since mid-1985, U.K. gilts and Canadian and Australian government bonds have yielded more than U.S. Treasuries, sometimes by a wide margin (see Chart 2). However, Japanese buying in these markets, especially the Canadian and Australian markets, is limited by their relatively small size; both exchange rates and bond prices in these markets are susceptible to significant moves when various Japanese investors simultaneously shift what would be small amounts of money for the U.S. Treasury market. Even so, these traditional high-yield markets should continue to attract Japanese investors over time.

Continental European bond markets have yet to attract much buying interest, apart from occasional forays into German bonds during bouts of dollar weakness. The small size and limited liquidity of most Continental markets are deterrents to large-scale Japanese investment, although ongoing liberalization and deregulation may gradually increase their attractiveness, as evidenced by increased purchases in France this year.

Japanese foreign equity portfolios are heavily weighted with U.S. shares. In some years, two-thirds of Japan's total net foreign equity purchases have gone into the U.S. market. U.K. equities also have attracted considerable ongoing buying interest, while net share purchases in other European stock markets have been relatively small. Equity transactions by Japanese investors in Luxembourg reflect mainly the exercise of conversion rights or the purchase of equity warrants connected with external bonds issued by Japanese corporations. However, growing awareness of increased European economic dynamism in anticipation of 1992 may lead to increased interest in European equities by Japanese investors. Japanese investor interest in the emerging

Chart 2

Yield spreads against United States

10-year government bonds, basis points

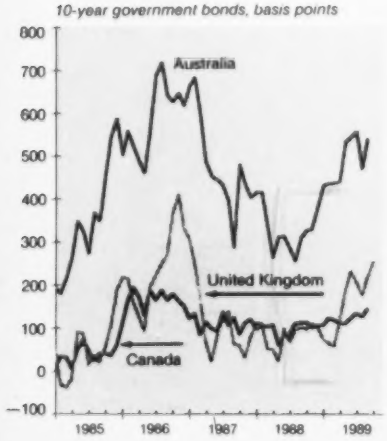
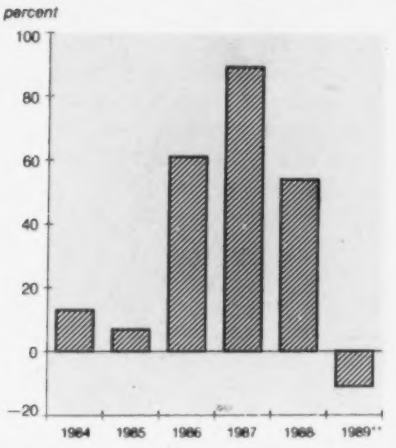


Chart 3

Foreign currency hedging proxy forJapanese portfolio investors*



*Estimated net short-term foreign-currency-denominated capital inflows as percent of estimated Japanese net long-term foreign-currency-denominated capital outflows for trade credits, loans, and security purchases.

**First half.

Asian markets is also likely to grow. The Singapore and Hong Kong stock markets attracted Japanese buying last year, and promise is seen in others such as South Korea, Taiwan, and Thailand. Currently, however, entry into many of these emerging markets by foreign investors is restricted and liquidity is limited.

Assessing the impact of Japanese net purchases of foreign securities on exchange rates cannot be based merely on the direction and currency composition of reported capital flows and related balance sheet changes. Portfolio investors hedge some of their currency risks, and decisions regarding the extent of such hedging can affect exchange rates. The ratio of net short-term, foreign-currency-denominated inflows to net long-term, foreign-currency-denominated outflows of the Japanese private sector provides a very rough proxy of changes in currency hedging by portfolio investors. As shown in Chart 3, this ratio was low in 1984 and 1985 as the dollar neared its peak, then rose sharply in 1986 and 1987 as the dollar sank; it fell again in 1988 when the dollar recovered, and then plummeted in the first half of 1989. As a measure of hedging, however, this ratio is seriously flawed now that Japanese investors have become active participants in the rapidly growing markets for foreign exchange options, forwards, and currency swaps; many hedging decisions are, no doubt, implemented off balance sheet and thus are not captured in the capital flow data.

Role of the banks

Japan's large current account surpluses and rapid buildup in net external assets have coincided with a period of growing Japanese prominence in international banking. Japanese banks' international assets (cross-border claims and local foreign-currency claims booked in offices in Japan and overseas) rose nearly fourfold, to $1,756 billion, in the five years ended in 1988. By that time they represented 38% of the total international assets of all banks based in countries that report to the Bank for International Settlements, up from 20% five years earlier.

Nearly two-thirds of Japanese banks' international business is booked in offices located in Japan, and much of it consists of cross-border activities reflected in the country's capital flows. Surprisingly, banks in Japan have not been a major channel for the country's overall net capital outflows. The large increase in their foreign assets booked in Japan, from $195 billion at end-1985 to $773 billion at end-1988, was fully matched by a run-up in their liabilities to foreigners, from $179 billion to $772 billion.* Moreover, if changes in both outstanding foreign assets and liabilities are adjusted for the estimated effects of exchange rate changes, the growth of banks' liabilities to foreigners exceeded that of their claims on foreigners by nearly $70 billion over this three-year period. Thus, Japanese banks have been net takers of funds from abroad, which they re-lent to nonbank residents.

Japanese banks, as noted earlier, have been among the

*A sizable portion of this increase in both external assets and liabilities reflects the establishment in late 1986 and subsequent rapid growth of the Japan Offshore Market (JOM) similar to International Banking Facilities (IBFs) in the United States. At the end of 1988, the JOM totaled about $330 billion, very close to the size of IBFs.

Table 9

Japanese overseas direct investment outflows

billions of dollars, fiscal years

	Annual			Cumulative total*
	1986	1987	1988	
Total	22.3	33.4	47.0	186.4
By region				
United States	10.2	14.7	21.7	71.9
Asia	2.3	4.9	5.6	32.2
Latin America	4.7	4.8	6.4	31.6
Excluding banking centers	0.5	0.3	0.7	9.0
Europe	3.5	6.6	9.1	30.2
Middle East	0.0	0.1	0.3	3.4
By sector				
Manufacturing	3.8	7.8	13.8	49.8
Finance	7.2	10.7	13.1	41.9
Real estate	4.0	5.4	8.6	20.6

*Fiscal years 1951-88.

major financial institutions investing in foreign securities, although the pace of their net purchases appears to have slackened somewhat in 1988 and early 1989. In part, this may reflect the flattening or inversion of yield curves which reduces the attractiveness of acquiring medium- and long-term bonds funded by short-term liabilities. Net new cross-border term lending by banks from their offices in Japan has been fairly modest, judged by the roughly $15 billion annual net long-term lending to foreigners by banks, insurance companies, and government financial institutions combined. Japanese banks, like those in other countries, have sharply reduced their new lending to LDCs, especially those experiencing debt-servicing difficulties. They do appear to have continued to expand their loans to developing countries in Asia and to industrial-country borrowers, although a large portion of the loans to the latter are booked in their offices outside Japan and thus do not affect Japan's capital flows. Japanese regulators recently expressed concern about the degree of involvement in LBO financing. The new BIS guidelines on risk-based capital also may have slowed the expansion of Japanese banks' investing and lending abroad.

Direct investment accelerates

Just when new purchases of foreign securities were peaking in 1986, Japanese capital outflows in the form of direct investments abroad took off. Such outflows accelerated from less than $7 billion in 1985 to more than $34 billion last year. And, in the first three quarters of 1989, Japanese overseas direct investment hit $41 billion at an annual rate.

Several factors explain this rapid increase. One is the escalation of trade friction with the United States and other industrial countries, which has caused Japanese manufacturers to step up investment abroad to circumvent actual or threatened trade restrictions. In addition, Japanese direct investment abroad has been motivated by changes in relative production costs that accompanied the sharp appreciation of the yen after the 1985 Plaza Accord. Once Japanese producers became convinced that the yen's appreciation was not a temporary phenomenon, they moved rapidly to expand production facilities in lower-cost locations, especially but not exclusively in Southeast Asia. Companies operating in labor-intensive industries and those with standardized technology and assembly-line manufacturing were particularly active. The combination of yen appreciation and the escalation of land prices in Japan also led Japanese real estate investors to seek out higher current returns on foreign properties, particularly in the United States. Recently, anticipation of possible trade and other restraints in Europe after the unification of the internal EC markets has caused Japanese companies, in both manufacturing and finance, to establish their presence safely inside in time for 1992.

Driven by the combination of economic and political factors, manufacturing headed up Japan's overseas direct investment activity in 1988, though it still accounted for less than 30% of last year's total direct investment outflows, and only about 27% of the outstanding book value of cumulative flows since 1951 (see Table 9). Nearly as important in

Table 10

Sectoral composition of Japanese overseas direct investment

cumulative flows for fiscal years 1951-88
billions of dollars

	Total	North America	Asia	Europe
Total	186.4	75.1	32.2	30.2
Manufacturing	49.8	23.9	12.4	4.9
Chemicals	6.5	2.3	1.8	0.6
Metals	7.7	2.6	2.3	0.3
Machinery and equipment				
General	4.9	2.6	1.0	0.6
Electric	10.2	6.0	2.4	1.3
Transport	7.0	3.0	1.1	0.9
Mining	13.9	1.6	6.9	1.1
Commerce	20.0	11.7	1.9	4.0
Finance	41.9	12.4	2.5	14.9
Real estate	20.6	15.8	1.2	1.4

terms of both 1988 flows and cumulative outstandings was finance, while new real estate investments valued at $8.6 billion brought outstandings in the category to more than $20 billion at the end of fiscal 1988. Regionally, close to 45% of total Japanese direct investment flows has gone into the United States in recent years, with manufacturing followed closely by real estate in importance (see Table 10). Europe has become the second most important regional destination of Japanese direct investment flows in the past two years, with the financial industry dominating. Annual direct investment flows to Asia continue to be largely concentrated in the manufacturing sector.

Direct investment abroad undoubtedly will continue to grow at a strong pace. The drive by Japanese manufacturing firms and financial institutions to increase operations abroad will continue to be influenced by fears of increased protectionism in the United States and Europe; by relocations and expansions of productive capacity in lower-cost areas, particularly in other Asian countries; by expectations of potential market growth, especially in the EC and Asia; and by relatively attractive current returns on foreign real estate investments, particularly in the United States but also in Europe. Japanese direct investment flows to the United States will continue to be larger than to any other country.

The rapid growth of this investment is raising political concerns in some host countries. Yet, in the United States, for example, the cumulative book value of Japanese direct investment at the end of 1988 was only one-fourth that of European companies and only double that of Canadian companies. Moreover, Japanese multinational manufacturers still lag far behind their U.S. and German counterparts in terms of the share of their total production carried out overseas — roughly 5% versus more than 20% and 17%, respectively. In real estate, however, Japanese investors are not lagging. Some of the political concerns could best be countered by changes in Japanese attitudes and policies to let U.S. and other foreign firms make the kinds of direct investments in Japan that they already have in other nations.

Official development assistance

Large current account surpluses, in combination with its growing economic power, have generated rising calls, from within and abroad, for Japan to step up its assistance to developing countries. Official policy has come to acknowledge that Japan's role in resolving the problems of Third World debt and development must be commensurate with the size of its economy. Last July Japan outlined plans for recycling the equivalent of an additional $35 billion in financial assistance to developing countries over the period ending March 1992. This $35 billion pledge supplements earlier recycling plans announced in 1986 and 1987; these totaled $30 billion and are to be completed in the current fiscal year. Over 95% of the latter sum has been committed, although only about half had actually been disbursed by mid-1989. The $65 billion total is intended to be largely additional to Japan's ongoing official development assistance (ODA) programs.

Table 11

Official development assistance

by major industrial countries

	Billions of dollars		Percent of GNP
	1986	*1987*	*1987*
Japan	5.6	7.5	0.31
United States	9.6	8.9	0.20
*EC members**	16.1	19.1	0.50
*Total DAC***	36.7	41.5	0.35

*Excluding Greece, Portugal, and Spain.
**Members of OECD's Development Assistance Committee.

Table 12

Japan's bilateral official development assistance

net disbursements in 1988

	Millions of dollars	Percent of total
Asia	4039	62.8
Indonesia	985	15.3
China	671	10.5
Philippines	535	8.3
Thailand	361	5.6
Bangladesh	342	5.3
Pakistan	302	4.7
India	173	2.8
Africa	884	13.8
Middle East	584	9.1
Latin America	399	6.2
Other	522	8.1
Total	6426	100.0
Grants	3514	54.7
Loans	2912	45.3

The latest $35 billion recycling plan, like the earlier ones, envisages a mix of government- and private-sector effort. Some $10 billion is earmarked for support of the Brady Plan, $8 billion to come in the form of Japanese Export-Import Bank (JEXIM) loans, and $2 billion in Overseas Economic Cooperation Fund (OECF) credits. Commitments already have been made to Mexico and the Philippines in conjunction with their debt reduction plans. In addition to the $8 billion of credits to heavily indebted LDCs, in the forms of parallel financing with the IMF and cofinancing with the World Bank and other multilateral development banks, JEXIM is slated to lend another $5.5 billion to other developing countries; like much of Japan's previous aid flows, these credits probably will be heavily directed toward Asian countries. JEXIM credits will be at interest rates close to commercial levels, mostly yen-denominated, and all untied. The OECF, the government's soft loan agency, is to provide $7 billion in concessional loans, including the $2 billion in support of the Brady Plan. These loans will also be untied. The remaining $14 billion of the latest recycling package consists of an unspecified mix of government contributions to the IMF, World Bank, and other multilateral development institutions, together with private-sector investments. The latter will include purchases of yen-denominated bonds issued by multilateral institutions and developing countries, commercial bank credits — some in parallel with JEXIM loans — and direct investments by Japanese nonfinancial companies.

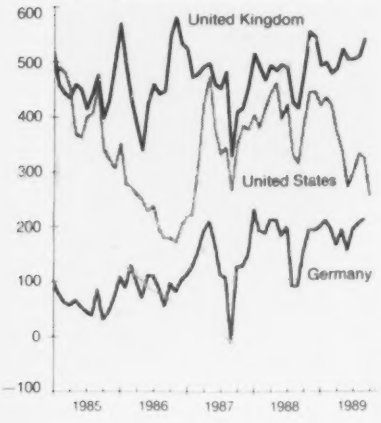
Japan's official assistance to developing countries has risen substantially in recent years and is targeted to increase further in the period ahead. Japan is now second only to the United States in terms of the dollar value of its disbursements for 1987, the last year with complete data for all members of the OECD's Development Assistance Committee (DAC). The yen's appreciation explains only part of Japan's increasing prominence. As a share of GNP, Japan's assistance is approaching the average for DAC countries, and clearly outranks the U.S. effort (see Table 11). The absolute amount of its assistance grew at a double-digit pace in yen terms in 1987, and has been spared the stringency affecting most other portions of the government budget.

Despite this record, Japan's aid efforts are sometimes met with a degree of skepticism that centers around doubts whether commitments are matched by actual disbursements, suspicions of double counting when announcing various aid initiatives, and beliefs that commercial motivations dominate. There is no question that in earlier years some Japanese officials saw aid as merely another method of promoting Japan's commercial interests. However, in recent years Japan has channeled a significant share of its ODA through multilateral channels, which weakens the direct tie to Japan's commercial interests. Moreover, many bilateral loans and grants currently being made are untied. Admittedly, Japan's bilateral ODA remains heavily concentrated in Asia (see Table 12), a region that is a major market for its exports, the recipient of sizable Japanese direct investment flows, and a key source of raw material imports. Of course strategic and humanitarian considerations are important factors

Chart 4

Yield spreads against Japan

10-year government bonds, basis points



in this region as well as commercial interests.

Concluding observations

Barring some unexpected development, Japanese foreign investment flows — securities purchases, direct investments, and loans — are likely to remain very large for several years to come. They may not grow as rapidly as in the past; indeed, the rate of increase in Japanese long-term capital outflows has already slowed considerably from an average annual rise of about 35% during 1980-86, to less than 9% per annum since then. However, even if maintained only at this year's annual rate of about $170 billion, Japanese long-term investment abroad will have significant influence on world financial markets.

In terms of the principal channels for foreign investment, Japanese financial institutions probably will continue to make large net purchases of foreign securities. Their total assets are growing by 10%-20% annually, depending on the type of institution. This growth alone is enough to generate sizable new foreign investment even without the share of assets devoted to foreign instruments increasing. In practice, the foreign share may continue to rise, albeit very gradually. Existing regulations governing the share of total assets in foreign investment are not binding in most cases, and should they become a constraint, past experience suggests that liberalization is a distinct possibility. The motivations for further international portfolio diversification still exist. Interest rate differentials have narrowed, but they still favor foreign bonds, an important consideration for yield-sensitive Japanese investors (see Chart 4). Moreover, the continued development of hedging techniques and increasing familiarity with them could make Japanese investors more comfortable with managing overseas interest rate and currency risks. Another consideration is possible shortages in the supply of new domestic interest-bearing securities, especially if the government stops using so-called deficit financing bonds as planned and if relatively stringent conditions for issuing debt securities domestically continue to limit the supply of domestic corporate bonds.

The shift in the pattern of Japanese long-term capital outflows that has been occurring recently seems likely to continue. In terms of net purchases of foreign securities, bonds will continue to dominate, but the portion going into equities could increase. The share of foreign equities in Japanese portfolios is low relative to many other countries. Japanese direct investment overseas probably will continue to grow at a more rapid rate than foreign portfolio investment. The economic and political incentives are strong. And, as with Japanese portfolio investment in foreign equities, Japanese direct investors have considerable catching up to do before they approach a relative scale of foreign direct investment similar to that of U.S. and German companies. Finally, the Japanese government seems to be committed to further increases in the amount of financial resources it channels to developing countries, whether bilaterally or through multilateral institutions.

The magnitudes of Japanese foreign assets and investment flows are such that even relative-

ly modest shifts can have significant impact on asset prices in international markets including, of course, exchange rates. Japanese investor sentiments can change much more rapidly and generate much larger movements of funds than shifts in the country's current account balance. Thus, at least in the short run, the behavior of Japanese investors could have more influence on the yen exchange rate than current account trends.

Investment flows out of Japan helped weaken the yen this year. For the time being, Japanese investors' desire to acquire additional net foreign assets seems more than adequate to deploy excess domestic savings at current yen exchange rates and interest differentials. However, this situation may not persist. At some point, the resolution of domestic political uncertainties that unnerved Japanese investors earlier this year, together with relatively favorable domestic economic fundamentals, could cause Japanese investor sentiment to shift toward domestic yen assets. When this occurs, some combination of a higher yen exchange rate and a widening of real interest rate differentials could result.

Statistical appendix

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Information herein is from sources considered to be reliable but is furnished without responsibility on the part of Morgan Guaranty Trust Company.

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Effective exchange rates — industrial countries

Index numbers, 1980-82 average=100.

	United States	Canada	Japan	Australia	France	Germany	Italy	United Kingdom	Austria	Belgium	Neth-erlands	Spain	Swit-zerland	Den-mark	Norway	Swe-den
Nominal against 15 other industrial-country currencies																
1984	122.3	97.3	112.9	94.2	84.4	107.3	86.7	88.1	103.6	88.9	103.9	77.4	110.5	93.9	97.8	84.3
1985	127.0	92.8	115.9	76.3	85.5	107.8	82.1	88.2	104.2	89.6	104.0	75.6	109.5	95.1	95.6	83.9
1986	106.0	87.6	150.1	61.4	87.4	116.1	82.9	80.7	107.8	92.9	110.3	73.4	118.1	99.7	89.2	81.6
1987	94.1	89.6	164.4	58.3	87.1	122.0	82.3	79.0	110.8	95.6	114.6	73.1	123.1	102.8	85.7	80.1
1988	88.0	95.6	181.6	61.9	85.7	121.8	79.8	83.8	110.2	94.6	114.4	75.6	121.9	101.2	85.6	80.3
1988																
November	86.6	96.2	187.6	66.3	85.0	121.8	79.6	84.7	110.2	94.2	114.1	76.1	120.9	100.3	84.3	80.4
December	86.2	98.0	186.7	67.1	84.6	121.4	80.0	85.6	110.0	94.2	113.6	77.1	119.9	100.3	85.0	80.4
1989																
January	88.1	99.0	183.7	69.4	84.1	120.3	79.9	85.9	109.6	93.7	112.8	79.0	117.7	98.5	85.8	80.8
February	88.5	99.3	183.8	68.6	84.0	120.2	79.9	85.4	109.5	93.6	112.8	79.0	117.7	98.0	86.0	80.7
March	89.7	99.1	181.1	66.2	84.6	120.4	79.7	84.3	109.5	93.7	112.9	79.2	116.2	98.0	86.0	80.8
April	89.9	99.8	179.4	65.4	84.9	120.6	79.9	83.9	109.9	93.9	112.9	79.6	113.8	98.2	86.2	81.2
May	92.6	100.1	174.7	64.7	84.5	120.0	80.2	83.0	109.7	93.6	112.8	78.6	112.3	97.7	86.2	81.5
June	94.7	100.1	168.8	64.7	84.3	120.1	80.7	80.2	109.6	93.8	113.1	76.9	116.0	98.0	86.1	81.7
July	92.0	100.2	170.1	63.1	84.7	120.8	81.2	81.1	109.8	94.2	113.5	78.9	116.8	98.9	85.7	81.3
August	92.5	101.6	170.0	64.2	84.7	120.2	81.5	80.5	109.6	93.9	113.2	78.7	116.3	98.5	85.8	81.5
September	93.8	101.2	166.3	65.8	84.7	120.2	81.3	80.1	109.4	93.9	113.1	78.6	115.9	98.4	85.8	81.7
October	91.8	101.5	167.6	64.9	85.5	122.0	80.6	78.7	110.5	94.5	114.2	78.6	116.1	99.6	85.6	81.3
September 15	94.9	101.1	164.9	66.3	84.6	119.7	81.3	80.0	109.4	93.7	112.9	78.6	115.7	98.1	85.8	81.9
22	93.8	101.2	165.8	66.1	84.7	120.2	81.2	80.3	109.6	93.9	113.2	78.8	115.8	98.4	85.9	81.7
29	91.8	101.2	169.1	65.5	85.0	121.1	81.2	80.3	109.2	94.1	113.6	78.4	116.3	98.9	85.8	81.5
October 6	91.9	101.4	168.8	65.2	85.2	121.3	80.5	80.0	110.2	94.2	113.8	78.3	116.5	99.0	85.7	81.5
13	92.9	101.8	166.6	65.5	85.4	121.6	80.5	78.2	110.4	94.3	114.0	78.4	115.5	99.2	85.7	81.6
20	91.6	101.4	167.9	64.4	85.6	122.3	80.5	78.3	110.7	94.7	114.5	78.6	116.1	99.9	85.5	81.1
27	91.3	101.4	167.3	64.5	85.7	122.3	80.8	78.5	110.7	94.8	115.5	78.6	116.2	100.1	85.5	81.1
November 3	91.6	101.5	166.1	65.5	85.9	122.5	80.9	77.3	110.8	95.0	114.7	79.3	116.2	100.4	85.4	81.1
Real against 15 other industrial-country currencies																
1984	119.7	100.1	97.5	106.5	97.0	98.0	101.8	90.2	103.0	85.9	97.8	91.0	100.1	99.2	100.8	95.9
1985	122.3	96.4	97.0	89.4	100.5	96.7	100.2	92.9	103.3	85.3	96.6	92.4	98.0	101.3	99.7	96.8
1986	102.4	93.6	115.4	79.6	103.5	103.4	102.9	87.4	106.8	84.8	101.3	94.2	106.0	107.8	97.7	96.3
1987	91.8	96.8	119.6	81.8	104.8	106.9	103.8	87.5	108.9	84.7	104.2	96.2	110.1	112.1	100.9	95.8
1988	87.4	104.7	125.9	91.1	102.2	106.2	104.2	94.4	107.6	81.5	100.7	100.8	107.1	112.0	102.1	99.3
1989																
May	92.9	108.0	119.9	96.1	98.9	103.3	108.7	94.6	105.9	81.6	97.5	105.7	97.4	108.8	102.3	104.9
June	94.9	107.7	116.5	95.8	98.7	103.3	109.9	91.5	106.4	81.5	97.3	103.6	100.4	108.9	102.6	105.2
July	92.2	107.6	117.4	93.9	99.5	103.7	110.9	93.0	108.5	82.2	95.8	107.1	100.7	109.8	101.1	104.8
August	92.7	108.9	117.1	95.7	99.4	103.1	112.0	92.4	108.3	81.9	95.8	106.9	100.1	109.7	100.7	105.5
September	93.8	108.1	114.7	98.3	99.2	102.8	112.4	92.2	106.6	81.7	96.2	106.2	99.8	109.9	101.8	106.9
October	91.8	108.1	115.6	97.2	100.1	104.2	112.2	90.7	107.0	82.3	96.5	106.2	100.3	111.5	101.1	106.9
Real against 18 other industrial-country and 22 LDC currencies																
1984	120.9	102.7	102.0	106.8	96.4	96.8	101.0	89.7	102.6	85.0	95.9	91.2	99.8	99.1	100.8	95.7
1985	123.8	99.1	102.0	90.0	100.0	95.8	99.8	92.4	102.9	84.5	94.8	93.1	97.8	101.3	100.1	96.8
1986	107.8	94.8	120.0	81.4	104.2	104.7	104.4	88.3	107.7	85.4	101.3	96.8	107.9	108.3	98.5	97.1
1987	97.8	97.0	123.3	83.3	106.1	109.3	106.5	89.3	110.6	85.9	105.3	99.8	113.1	113.1	102.0	97.1
1988	92.4	104.3	129.0	92.1	102.9	107.6	106.1	95.7	108.7	82.3	101.0	103.7	109.2	112.8	102.9	100.2
1989																
May	98.0	108.3	124.1	96.7	99.2	103.8	110.0	95.1	106.3	81.7	97.2	108.9	98.9	109.2	103.0	105.0
June	99.2	108.0	120.3	96.2	98.9	103.6	111.0	92.0	106.9	81.5	96.8	106.1	101.8	109.3	103.1	105.1
July	96.7	107.6	120.5	94.5	99.8	104.3	112.2	93.6	109.2	82.3	95.6	109.9	102.2	110.2	101.6	104.8
August	97.0	109.0	120.2	95.9	99.6	103.4	113.1	92.8	108.8	81.9	95.4	109.5	101.5	110.0	101.2	105.4
September	98.0	108.2	117.9	98.4	99.4	103.2	113.5	92.7	107.0	81.7	95.7	108.8	101.2	110.2	102.4	106.8
October	94.8	107.7	115.8	97.1	100.0	104.2	112.2	90.2	107.4	82.2	95.8	107.4	101.3	111.6	101.5	106.3

Real effective exchange rates — developing countries

Index numbers, 1980-82 average=100.

	Argentina	Brazil	Chile	Colombia	Mexico	Peru	Venezuela	Hong Kong	Indonesia	Korea	Malaysia	Philippines	Singapore	Taiwan	Israel	Turkey
1984	80.2	85.8	90.2	99.6	91.9	105.9	85.9	99.5	96.1	96.6	119.8	107.9	102.5	97.2	119.4	90.4
1985	71.2	85.0	79.6	85.5	90.5	96.8	93.0	103.5	94.6	89.3	116.2	114.5	95.6	94.6	106.6	89.7
1986	61.3	74.7	69.0	67.9	65.3	97.1	89.5	93.9	72.8	76.3	95.3	90.8	80.8	89.1	101.2	71.6
1987	53.9	74.2	65.7	63.6	67.1	108.4	65.0	89.9	56.1	75.6	89.4	87.6	74.5	94.6	97.7	63.6
1988	59.7	81.2	60.8	61.3	80.0	124.5	71.9	90.6	54.0	82.3	80.3	89.4	73.1	100.1	107.2	64.9
1988																
November	66.9	81.5	59.5	58.1	78.1	112.6	75.7	93.6	52.8	85.8	77.4	88.8	74.3	101.0	111.0	63.0
December	68.1	82.8	60.4	57.9	78.1	111.0	76.3	93.0	52.4	86.9	76.5	91.1	74.4	100.1	111.1	62.3
1989																
January	70.4	84.0	61.1	60.3	78.2	126.1	84.5	92.6	53.8	88.5	77.4	93.6	76.3	101.5	105.6	66.6
February	71.6	82.1	62.5	60.4	78.1	129.2	96.8	93.5	53.7	89.4	77.5	92.4	77.1	102.2	109.1	66.4
March	79.5	83.8	61.8	61.9	78.4	140.4	48.5	95.8	54.3	90.5	77.4	92.1	77.1	103.0	110.6	66.6
April	39.0	88.3	64.1	61.7	78.0	164.9	51.9	97.4	54.6	91.5	77.9	92.1	77.1	104.8	111.0	67.7
May	29.0	92.8	67.4	62.0	78.1	171.0	59.3	101.3	55.9	93.8	80.9	94.6	78.8	109.8	111.8	72.6
June	43.0	94.9	64.5	62.0	77.6	189.4	64.2	102.3	56.8	95.2	81.9	96.1	79.7	109.9	110.8	76.2
July	49.1	92.9	61.2	60.7	75.9	186.7	64.4	98.7	57.0	93.1	81.2	93.9	79.5	111.5	107.2	76.8
August	48.2	102.1	61.0	60.7	75.3	190.8	64.2	98.9	56.6	93.8	82.2	94.1	80.2	112.3	108.4	77.9
September	49.6	96.5	62.5	60.5	75.2	206.2	68.3	101.1	56.5	94.9	82.0	93.6	80.1	113.8	110.0	78.1
October	48.6	88.8	57.8	58.8	73.6	224.0	67.0	100.5	56.4	90.6	80.5	93.7	78.6	111.0	119.8	77.8

Weights in effective exchange rate calculations for selected currencies

based on 1980 trade in manufactures

	Indices for currency of									
	United States		Japan		Canada	Germany		France	Italy	United Kingdom
	Narrow	Broad	Narrow	Broad	Narrow	Narrow	Broad	Narrow	Narrow	Narrow
Percent weight on currency of										
United States	0.0	0.0	54.9	35.2	83.5	9.9	9.8	10.0	9.0	16.2
Japan	23.2	18.5	0.0	0.0	4.0	3.6	6.3	3.0	2.2	4.8
Canada	30.3	20.7	4.0	3.1	0.0	0.8	0.9	0.7	0.8	2.8
Australia	2.4	1.7	4.7	2.7	0.6	0.6	0.4	0.3	0.6	2.2
Europe	43.6	38.2	35.4	42.1	11.9	85.1	76.1	86.1	87.4	74.0
Germany	10.9	9.9	10.6	12.1	2.3	0.0	0.0	26.6	29.8	18.5
France	5.9	5.1	4.1	5.7	1.3	18.0	15.8	0.0	23.1	11.3
Italy	4.1	3.7	2.4	4.0	1.0	12.2	11.5	16.6	0.0	7.4
United Kingdom	9.2	8.2	6.7	7.2	3.7	8.9	10.0	9.1	8.8	0.0
Belgium	3.5	2.2	2.2	1.9	0.7	11.0	8.2	13.7	6.1	8.1
Netherlands	3.0	2.0	3.0	2.2	1.0	11.5	8.4	5.7	4.8	8.6
Scandinavia	2.9	2.4	2.1	2.7	0.9	7.5	6.4	3.7	8.5	8.9
Spain	1.4	1.3	1.1	1.3	0.3	2.1	2.1	4.5	3.1	2.2
Other	2.7	3.4	3.2	5.0	0.7	13.9	13.7	6.2	3.2	9.0
Brazil	—	2.2	—	1.4	—	—	0.9	—	—	—
Mexico	—	4.6	—	1.0	—	—	0.4	—	—	—
Hong Kong	—	2.0	—	0.8	—	—	0.8	—	—	—
Korea	—	2.1	—	2.3	—	—	0.6	—	—	—
Taiwan	—	3.1	—	1.4	—	—	0.6	—	—	—
Other countries	—	6.9	—	10.0	—	—	3.2	—	—	—

A currency's nominal effective exchange rate is an index of its trade-weighted average value against the currencies of the corresponding country's principal trade partners. The real effective exchange rate, which adjusts the nominal index for relative price changes, gauges the effect on the international price competitiveness of the country's manufactures due to currency changes and differential inflation.

The monthly and weekly exchange rates used are averages of daily spot rates. The relative price changes are based on indices most closely measuring the prices of domestically produced finished manufactured goods, excluding food and energy at the first stage of manufacturing.

The weights for the "narrow" indices (versus 15 industrial-country currencies) are proportional to the value of bilateral exports plus imports of manufactures in 1980. For the "broad" indices (versus 18 industrial-country and 22 LDC currencies), modified weights allow not only for competition between trade partners in each other's home markets but also for export competition in third markets.

The indices should be interpreted cautiously on three counts. First, the base period (1980-82 = 100) should not be assumed one of equilibrium in relation to purchasing power parity, the balance of payments, or other policy objectives. Second, available price indices are not fully comparable. Third, especially in LDCs, taxes and subsidies on exports, and tariffs, deposits, and special taxes on imports create *de facto* multiple exchange rate systems.

Central bank discount rates

at or near end of month

	1987	1988	1989							Current	
	Dec	Dec	Apr	May	Jun	Jul	Aug	Sep	Oct	1989	effective since
United States	6.00	6.50	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	Feb 24, 89
Canada	8.66	11.19	11.62	12.40	12.33	12.36	12.41	12.48	12.42	12.42	Oct 26, 89
Austria	3.00	4.00	5.00	5.00	5.50	5.50	5.50	5.50	6.50	6.50	Oct 6, 89
Belgium	7.00	7.75	8.75	8.75	9.25	9.25	9.25	9.25	10.25	10.25	Oct 5, 89
Denmark	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	Oct 27, 83
Finland	7.00	8.00	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	Jan 1, 89
France	7.75	7.75	8.25	8.25	8.25	8.75	8.75	8.75	9.50	9.50	Oct 5, 89
Germany	2.50	3.50	4.50	4.50	5.00	5.00	5.00	5.00	6.00	6.00	Oct 5, 89
Ireland	9.25	8.00	9.00	9.00	10.00	10.00	10.00	10.00	11.00	11.00	Oct 5, 89
Italy	12.00	12.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	Mar 3, 89
Netherlands	3.75	4.50	5.50	5.50	6.00	6.00	6.00	6.00	7.00	7.00	Oct 5, 89
Portugal	14.50	13.50	14.50	14.50	14.50	14.50	14.50	14.50	14.50	14.50	Mar 21, 89
Spain	13.50	12.40	13.75	13.75	13.75	14.50	14.50	14.50	14.50	14.50	July 7, 89
Sweden	7.50	8.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50	Apr 25, 89
Switzerland	2.50	3.50	4.50	4.50	5.50	5.50	5.50	5.50	6.00	6.00	Oct 5, 89
United Kingdom	8.37	12.81	12.81	13.75	13.75	13.75	13.75	13.75	14.75	14.75	Oct 5, 89
Japan	2.50	2.50	2.50	3.25	3.25	3.25	3.25	3.25	3.75	3.75	Oct 11, 89
Australia	12.50	15.00	16.60	17.60	17.60	17.60	17.60	17.60	18.00	18.00	Oct 26, 89
New Zealand	18.55	15.10	15.10	14.60	14.60	14.70	14.70	15.15	14.90	14.90	Oct 31, 89
Argentina*	17.59	15.43	171.66	256.00	222.00	370.00	15.83	10.71	10.80	10.80	Sep, 89
Korea	7.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	Sep, 88
Singapore	5.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	Aug, 88
Venezuela	8.00	8.00	30.00	32.00	37.0	37.00	34.00	34.00	34.00	34.00	Aug, 89

*Percent per month.

Day-to-day money rates

monthly averages

	1987	1988	1989								
	Dec	Dec	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
United States	6.66	7.57	9.36	9.85	9.84	9.81	9.53	9.24	8.99	9.02	8.84
Canada	8.07	9.20	11.22	11.10	12.28	12.33	12.28	12.25	12.28	12.06	12.25
Austria	4.15	4.54	6.30	6.20	6.80	5.84	7.35	6.50	6.50	8.20	n.a.
Belgium	5.63	5.03	5.69	7.02	6.68	6.11	6.86	6.76	7.49	7.29	8.09
Finland	9.19	8.45	7.91	9.09	11.37	11.43	9.79	10.56	8.86	8.56	n.a.
France	7.71	7.53	8.70	8.45	8.31	8.51	8.93	9.19	9.05	8.94	9.85
Germany	3.72	4.01	5.94	5.61	5.85	6.32	6.47	6.91	6.76	6.91	7.80
Ireland	10.46	7.56	7.50	7.75	8.13	7.25	9.00	9.75	10.00	9.13	11.25
Italy	10.96	10.77	12.25	13.07	12.83	12.56	12.58	12.63	12.65	12.67	n.a.
Netherlands	5.11	4.50	6.10	6.25	6.52	6.80	6.78	7.00	7.20	7.26	7.97
Norway	13.86	13.31	11.45	11.47	11.40	11.07	10.70	11.10	10.60	n.a.	n.a.
Portugal	13.68	12.34	12.36	12.43	12.58	14.60	12.92	12.48	12.34	12.42	n.a.
Spain	15.83	11.29	13.47	13.89	13.91	13.97	14.42	15.11	15.10	14.98	14.83
Sweden	9.15	10.08	10.76	10.43	11.16	11.73	11.81	12.15	12.08	11.90	11.90
Switzerland	1.37	2.48	5.25	5.50	6.50	7.25	7.25	7.25	7.00	7.50	n.a.
United Kingdom	8.94	10.06	13.03	12.85	11.94	13.09	13.74	14.06	14.01	14.00	14.93
Australia	13.04	11.90	15.24	16.24	16.49	16.93	16.95	16.81	16.92	17.45	n.a.
Japan	3.51	3.62	3.89	4.01	4.05	4.19	4.85	5.04	5.22	5.28	5.81
Argentina*	9.59	16.06	19.50	21.38	46.68	112.77	106.60	15.00	12.69	7.40	6.15
Brazil*	13.47	22.75	18.95	20.42	11.53	11.40	27.29	33.19	35.49	38.61	47.66
Hong Kong	3.78	5.66	9.64	10.53	10.62	10.65	10.70	9.75	8.89	9.40	7.81
Singapore	3.09	3.87	5.05	4.64	4.90	5.28	5.06	4.99	5.09	5.25	5.35
Taiwan	3.90	4.70	4.42	3.64	10.85	11.21	7.95	n.a.	n.a.	n.a.	n.a.

*Percent per month.

Treasury bill rates

bond equivalent yields, at or near end of month

	1987	1988	1989								
	Dec	Dec	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
United States	5.84	8.38	9.03	9.24	8.71	8.96	8.31	8.06	8.11	8.21	7.94
Canada	8.41	10.94	11.61	12.14	12.37	12.15	12.08	12.11	12.16	12.23	12.17
Belgium	6.84	7.60	8.52	8.31	8.42	8.77	8.62	8.62	8.57	9.19	9.78
Ireland	8.69	8.17	8.22	8.12	8.87	9.42	9.13	9.74	10.18	9.14	11.34
Italy	11.66	11.44	11.50	12.99	12.70	12.25	10.84	12.48	12.95	12.99	n.a.
Netherlands	4.95	4.00	6.75	6.50	6.75	7.00	7.00	7.19	7.31	7.44	8.25
Spain	6.67	12.37	12.93	12.87	12.63	13.38	n.t.	n.t.	13.70	n.t.	n.t.
Sweden	9.05	10.40	11.40	11.60	11.61	11.63	11.81	n.a.	11.65	11.71	11.85
United Kingdom	8.38	12.91	12.91	12.79	12.62	13.72	14.10	13.69	13.81	14.41	14.98
Australia	10.06	14.97	16.27	15.64	16.17	17.29	17.17	16.76	16.96	17.46	17.91
Japan	2.38	2.38	2.38	2.38	2.38	2.38	3.14	3.14	3.14	3.14	3.14
Mexico	133.04	51.26	49.24	49.61	51.69	54.99	54.99	36.42	35.67	36.35	39.14
Philippines	13.35	17.51	15.63	15.67	16.26	16.80	17.45	17.43	20.80	23.25	23.58
Singapore	3.23	3.80	3.63	3.82	3.91	4.08	4.01	3.93	4.03	4.31	4.26

Representative money market rates

bond-equivalent yields on major short-term (mostly 3-4 month) money market instruments other than Treasury bills, at or near end of month

	1987	1988	1989								
	Dec	Dec	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
United States	7.21	9.39	10.29	10.39	10.03	9.71	9.45	8.65	9.00	9.15	8.78
Canada	8.90	11.10	12.20	12.40	12.63	12.45	12.30	12.27	12.30	12.36	12.30
Belgium	6.95	7.65	8.62	8.42	8.42	8.82	8.62	8.62	8.57	8.87	9.78
Finland	9.24	11.74	10.96	12.45	11.76	12.33	11.29	11.90	12.51	13.66	14.25
France	8.63	8.63	9.63	8.94	8.81	9.13	9.44	9.00	9.19	9.69	10.35
Germany	3.65	5.50	7.00	6.55	6.60	7.35	7.20	6.90	7.20	7.85	8.25
Ireland	8.81	8.50	8.38	8.25	9.25	9.44	10.50	10.06	10.63	10.69	11.94
Italy	11.50	11.75	12.50	12.50	10.50	11.00	12.38	12.50	12.50	12.63	n.a.
Netherlands	4.56	5.88	7.31	6.75	6.91	7.06	7.38	7.13	7.44	8.00	8.38
Portugal	14.34	13.42	12.97	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Spain	13.59	13.65	14.56	15.13	14.78	14.77	14.90	15.53	15.31	15.06	14.96
Switzerland	3.56	4.94	6.06	5.88	6.69	8.19	7.25	7.13	7.38	7.88	n.a.
United Kingdom	9.00	13.19	13.44	13.06	13.02	14.28	14.22	13.88	14.00	14.88	15.38
Australia	11.25	15.35	16.82	17.62	17.19	18.17	18.15	18.10	17.90	18.45	18.37
Japan	3.90	4.17	4.21	4.20	4.21	4.33	4.59	4.85	4.91	4.96	5.59
New Zealand	17.70	14.18	13.64	13.32	13.46	13.42	13.59	13.21	13.23	13.66	13.95
Chile	15.25	26.82	14.84	9.60	22.20	19.20	25.90	27.60	28.10	21.60	30.45
Hong Kong	1.50	9.25	10.44	11.00	10.94	10.60	10.06	9.00	9.13	9.25	8.31
Korea	7.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	n.a.	n.a.
Singapore	3.25	5.63	5.69	5.38	5.50	5.63	5.69	5.44	5.44	n.a.	n.a.
Taiwan	3.09	4.72	4.92	4.69	9.03	11.10	9.30	n.a.	n.a.	n.a.	n.a.
Venezuela	11.50	13.90	23.00	27.00	31.00	31.00	39.00	39.00	34.00	34.00	33.00

Commercial bank deposit rates

at or near end of month

	1987	1988	1989								
	Dec	Dec	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct
United States	7.10	9.18	10.04	10.12	9.75	9.44	9.08	8.41	8.76	8.96	8.51
Canada	8.40	11.01	11.60	11.71	12.50	12.35	12.12	12.17	12.27	12.26	12.26
Austria	4.25	5.65	6.75	6.60	6.75	6.97	7.30	7.55	7.20	8.10	n.a.
Belgium	6.69	7.38	8.44	8.06	8.19	8.63	8.50	8.50	8.44	9.20	9.63
Denmark	6.00	5.50	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	n.a.
Finland	10.12	11.68	10.82	12.28	11.77	11.74	11.74	11.89	12.32	12.32	14.18
France	8.63	8.38	8.93	8.63	8.56	8.72	9.06	8.94	8.81	9.32	9.95
Germany	3.50	5.05	6.25	6.15	6.15	6.90	6.75	6.56	6.82	n.a.	7.80
Ireland	8.62	8.13	8.13	8.13	9.13	9.25	9.38	9.88	10.50	10.63	11.81
Italy	9.81	8.40	5.80	4.85	5.90	9.60	9.80	11.90	11.90	n.a.	n.a.
Netherlands	4.50	5.75	7.19	6.69	7.06	7.44	7.25	7.06	7.31	7.88	8.25
Portugal	14.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	n.a.	n.a.
Spain	9.48	8.97	9.36	9.19	9.35	9.46	9.54	9.47	9.53	9.65	n.a.
Sweden	9.45	11.05	11.50	12.00	11.90	11.80	11.95	n.a.	11.80	11.90	12.10
Switzerland	3.37	4.69	5.81	5.63	6.44	7.94	7.00	6.88	7.13	7.63	n.a.
United Kingdom	8.81	12.94	13.13	12.88	12.75	14.13	13.88	13.75	13.88	14.13	15.13
Australia	11.47	13.85	15.25	16.25	16.00	17.00	17.50	17.50	17.50	16.50	n.a.
Japan	4.36	4.47	4.67	4.56	4.68	5.12	5.40	5.43	5.49	5.67	6.50
New Zealand	16.85	14.27	13.57	13.39	13.55	13.49	13.64	13.30	13.15	13.63	13.79
*Argentina**	14.00	11.57	18.57	20.00	50.00	81.11	65.90	14.71	9.49	5.67	5.92
Brazil	517.36	1442.73	679.21	636.21	399.47	446.30	1547.56	2969.05	3218.77	3355.00	8845.00
Chile	14.84	24.60	12.28	20.40	23.20	19.80	26.70	28.50	28.90	21.60	29.80
Hong Kong	1.50	9.25	10.44	11.00	10.94	10.60	10.06	9.00	9.13	9.25	8.31
Korea	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Mexico	120.35	31.75	29.90	29.90	29.90	29.90	29.90	29.63	28.96	29.10	31.36
Singapore	3.13	5.31	5.38	5.25	5.31	5.31	5.31	5.25	5.25	n.a.	n.a.
Taiwan	5.25	5.25	5.25	5.25	5.25	5.25	5.25	n.a.	n.a.	n.a.	n.a.
Venezuela	8.95	8.97	20.83	25.30	30.00	32.00	35.00	41.00	39.00	35.00	32.00

Commercial bank lending rates to prime borrowers

at or near end of month

	1987	1988	1989								
	Dec	Dec	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
United States	8.75	10.50	11.50	11.50	11.50	11.50	11.00	10.50	10.50	10.50	10.50
Canada	9.75	12.25	12.75	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50
Austria	8.25	8.75	8.75	9.25	9.25	9.25	9.75	9.75	9.75	9.75	n.a.
Belgium	8.75	9.75	10.25	10.75	10.75	10.75	10.75	10.75	10.75	11.25	12.25
Denmark	9.50	9.25	8.50	8.50	9.50	9.50	9.50	10.00	10.00	10.00	n.a.
Finland	8.99	10.25	9.92	9.94	10.06	10.13	10.18	10.18	10.20	10.31	n.a.
France	9.60	9.25	9.60	9.60	9.60	9.60	10.00	10.00	10.00	10.00	10.50
Germany	6.25	6.00	6.50	7.00	7.00	7.50	7.50	8.50	8.50	8.50	9.50
Ireland	11.50	10.75	10.75	10.75	10.75	11.75	11.75	12.75	12.75	12.75	13.75
Italy	13.00	12.88	13.00	13.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
Netherlands	4.87	6.00	7.13	6.75	7.00	7.25	7.50	7.50	7.50	8.06	8.38
Portugal	18.50	n.a.	18.67	19.08	19.38	19.65	19.83	19.88	19.88	20.15	20.27
Spain	16.34	13.20	13.69	13.90	13.87	13.91	13.93	14.27	14.37	13.74	13.81
Sweden	11.50	12.00	12.00	12.00	12.00	12.50	12.50	12.50	12.50	12.50	12.50
Switzerland	5.00	5.50	6.25	6.25	6.25	6.25	7.50	7.50	8.25	8.25	n.a.
United Kingdom	8.50	13.00	13.00	13.00	13.00	14.00	14.00	14.00	14.00	14.00	15.00
Australia	14.00	16.50	18.00	18.50	18.75	19.75	19.75	20.25	20.25	20.25	20.25
Japan	3.38	3.38	4.25	4.25	4.25	4.25	4.25	4.88	4.88	4.88	4.88
New Zealand	19.30	16.30	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75
*Argentina**	14.80	12.50	19.50	27.00	142.94	220.00	110.00	210.00	16.00	7.80	7.80
Chile	30.99	44.41	29.38	26.40	29.90	25.80	30.80	31.80	32.20	25.90	32.88
Hong Kong	5.50	10.00	10.50	11.50	11.50	11.00	11.00	10.00	10.00	10.00	10.00
Korea	10.00	10.00	10.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
Singapore	6.10	6.13	6.15	6.18	6.19	6.23	6.23	6.23	6.23	6.23	6.23
Taiwan	9.00	9.00	9.00	9.00	12.00	12.00	12.00	n.a.	n.a.	n.a.	n.a.
Venezuela	13.00	12.76	12.75	27.60	37.39	37.50	42.00	42.50	39.72	36.50	30.20

*Percent per month.

Domestic government bond yields

long-term issues, at or near end of month

	1987	1988	1989								
	Dec	Dec	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
United States	8.95	9.00	9.14	9.11	8.91	8.60	8.05	7.92	8.21	8.31	7.92
Canada	10.02	10.19	10.54	10.48	10.12	9.70	9.31	9.15	9.52	9.74	9.45
Austria	6.89	6.54	6.73	6.90	6.95	7.13	7.17	7.14	7.14	7.17	n.a.
Belgium	8.04	8.05	8.45	8.48	8.29	8.37	8.45	8.37	8.41	8.70	8.90
Denmark	12.05	9.39	9.93	9.74	9.73	10.12	9.76	9.19	9.74	9.96	n.a.
Finland	7.67	7.22	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
France	9.99	8.53	9.26	8.99	8.72	8.76	8.70	8.45	8.46	8.87	8.99
Germany	6.54	6.62	7.08	7.04	6.96	7.16	6.93	6.78	6.98	7.18	n.a.
Ireland	10.45	8.41	8.79	8.77	8.89	9.31	8.96	8.53	8.93	8.94	9.16
Italy	10.50	10.70	10.89	11.54	11.52	11.59	11.44	11.63	11.61	11.84	n.a.
Netherlands	6.32	6.43	7.17	7.14	7.30	7.47	7.14	6.97	7.31	7.75	8.25
Norway	13.29	11.70	10.78	10.83	10.68	10.66	10.85	10.83	n.a.	n.a.	n.a.
Portugal	14.82	13.95	13.53	14.30	14.23	14.53	15.17	15.47	15.96	n.a.	n.a.
Spain	13.44	12.82	13.20	13.57	13.51	13.62	13.79	13.80	13.70	14.38	14.37
Sweden	11.39	10.87	10.94	11.14	11.08	11.03	11.34	n.a.	11.17	11.24	11.64
Switzerland	3.95	4.11	4.79	4.88	5.11	5.36	5.12	5.18	5.28	5.40	n.a.
United Kingdom	9.51	9.45	9.29	9.26	9.51	9.79	9.74	9.32	9.47	9.81	9.86
Australia	12.85	12.95	13.65	13.65	13.40	13.90	13.50	13.35	12.95	13.67	13.55
Japan	5.07	4.69	4.97	5.09	5.30	5.23	5.37	4.84	4.92	5.06	5.35
New Zealand	14.30	13.60	13.27	13.21	13.38	13.16	13.03	12.63	12.07	12.45	n.a.

Eurocurrency deposit rates

prime banks' bid rates, at or near end of month

	1987	1988	1989								
	Dec	Dec	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Eurodollar											
overnight	6.75	9.00	9.63	9.88	9.56	10.75	9.75	8.56	8.69	9.00	8.75
one month	7.06	9.06	10.00	9.94	9.75	9.63	9.31	8.56	8.88	9.00	8.63
three months	7.37	9.19	10.19	10.19	9.88	9.50	9.19	8.44	8.88	9.06	8.56
six months	7.50	9.31	10.38	10.56	9.94	9.38	8.94	8.25	8.88	9.00	8.38
twelve months	7.81	9.50	10.63	10.94	10.00	9.38	8.81	8.13	8.81	9.00	8.31
Euro-French franc											
one month	8.75	8.56	9.44	8.44	8.56	8.88	9.25	8.94	9.00	9.31	10.19
three months	9.00	8.63	9.69	8.75	8.75	9.00	9.31	8.88	9.06	9.44	10.13
six months	9.25	8.63	9.75	8.94	8.81	9.06	9.31	8.88	9.06	9.44	10.06
twelve months	9.25	8.75	9.94	9.13	8.94	9.19	9.31	8.88	9.06	9.44	9.94
Euromark											
one month	3.25	5.25	6.75	6.06	6.19	6.88	6.94	6.81	7.00	7.63	7.94
three months	3.37	5.31	6.94	6.31	6.38	7.13	6.94	6.81	7.13	7.88	8.13
six months	3.50	5.50	7.06	6.69	6.63	7.31	7.13	6.75	7.25	7.88	8.13
twelve months	3.75	5.56	7.13	6.88	6.81	7.38	7.19	6.63	7.25	7.81	8.00
Euro-Swiss franc											
one month	2.50	4.63	5.81	5.56	6.63	8.31	7.38	7.00	7.31	7.63	7.69
three months	3.00	4.69	6.00	5.75	6.63	8.13	7.38	7.00	7.31	7.81	7.81
six months	3.19	4.81	6.13	6.00	6.63	7.81	7.25	6.75	7.25	7.81	7.81
twelve months	3.25	4.81	6.19	6.06	6.56	7.69	7.13	6.63	7.19	7.75	7.69
Eurosterling											
one month	8.56	12.88	13.13	12.81	12.63	14.19	13.94	13.81	13.94	14.50	15.19
three months	8.81	13.06	13.31	13.00	12.88	14.31	14.13	13.81	13.94	14.56	15.25
six months	9.00	13.06	13.31	13.00	12.94	14.25	14.19	13.63	13.88	14.56	15.13
twelve months	9.31	12.81	13.19	12.88	12.88	14.06	14.06	13.25	13.50	14.38	14.56
Euroyen											
one month	4.00	4.44	4.69	4.31	4.44	4.94	5.25	5.13	5.50	5.50	6.19
three months	4.12	4.56	4.63	4.50	4.69	5.06	5.38	5.25	5.44	5.56	6.38
six months	4.12	4.50	4.69	4.63	4.88	5.13	5.44	5.25	5.38	5.56	6.38
twelve months	4.12	4.63	4.88	4.88	5.00	5.19	5.44	5.25	5.38	5.56	6.38
European currency unit											
one month	6.62	7.94	8.63	8.25	8.25	8.81	9.31	9.13	9.38	10.13	10.69
three months	6.75	8.00	9.06	8.63	8.50	9.13	9.38	9.13	9.56	10.31	10.69
six months	6.87	8.13	9.25	9.00	8.75	9.38	9.69	9.13	9.63	10.31	10.69
twelve months	7.00	8.13	9.50	9.19	9.06	9.50	9.75	9.13	9.50	10.31	10.56

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Government bonds and global diversification

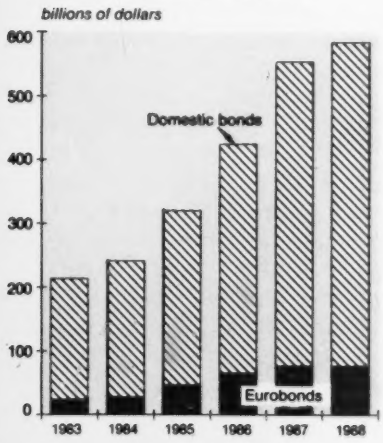
Foreign investors have become major buyers of government bonds in recent years. Cross-border holdings of bonds issued by governments of eleven major countries almost tripled between 1983 and 1988, growing from $213 billion to $583 billion (see Chart 1). The growth reflects continuing efforts by investors worldwide to build up their international securities portfolios.

The globalization of securities markets is being propelled by the compelling logic of diversification and the tearing down of some long-standing barriers to international investment. In the early 1980s, financial deregulation, including the removal of capital and exchange controls, opened up many investment opportunities. As investors probed foreign markets, they became increasingly aware of both the peculiarities and potential of foreign securities, encouraging further investment. In particular, investors learned that foreign assets provide substantial diversification benefits because the returns on foreign assets do not move one for one with domestic returns and thus allow a reduction in overall portfolio risk without sacrificing return. At the same time, additional financial instruments for hedging exchange rate risk became widely available, ameliorating a major concern of international investors.

The increase in international asset diversification can be seen in the context of the $19.3 trillion in bonds and equities issued by public and private entities of eleven major countries in 1988 (see Table 1).* Together these countries report that $1.8 trillion of these securities were held by foreign investors. Given that outstandings in these eleven countries account for close to 90% of world capitalization, these totals can be treated as a close proxy of the global securities portfolio.** By this measure then,

Chart 1

*Cross-border holdings of government bonds**



*Foreign-held bonds issued by governments in Australia, Belgium, Canada, France, Germany, Italy, Japan, Netherlands, Spain, United Kingdom, United States.

*The eleven, consisting of Australia, Belgium, Canada, France, Germany, Italy, Japan, Netherlands, Spain, United Kingdom, and United States, were chosen because of the availability of data on their external position and the attractiveness and liquidity of their capital markets.

**The data are based on what the eleven countries report as external liabilities. For the world as a whole, external liabilities should add up to external assets, permitting one to make direct inferences about investors' foreign asset portfolios. Liability data are used here because they are generally of better quality and provide more detail than asset data. Note that securities

Table 1

Global portfolio size and composition

billions of dollars

	1983	*1985*	*1988*
*Global portfolio**	7,602	10,715	19,341
Equities	3,284	4,667	9,278
Bonds	4,318	6,049	10,063
*Cross-border portfolio***	578	930	1,767
Equities	233	341	619
Bonds	345	589	1,148
Private bonds	132	269	565
Government bonds	213	320	583
*Official holders****	100	125	240
Nonofficial holders	113	195	343

*Total issued by private and public entities of eleven major countries.
**Nonresident-held securities issued by private and public entities of eleven major countries.
***Estimated.

are considered foreign in these data if the investor's country of residence differs from the issuer's, irrespective of currency denomination. Investors, however, may be more likely to classify their holdings by currency than by the residence of the issuer. Also note that the data often do not correctly report the nationality of the ultimate investor. For example, international investment funds operating in London invest for both residents and nonresidents, yet all of these investments are reported as U.K. investments abroad.

9% of the global securities portfolio is invested in foreign securities. This measure of international portfolio diversification is up from 7¼% at the end of 1983, although unchanged from 1986.

These averages mask a great deal of diversity among the countries surveyed. Not surprisingly, investors in smaller countries devote a larger slice of their securities portfolios to foreign assets, as their domestic markets provide only limited diversification opportunities and they have greater need to invest in foreign currency assets as a hedge against imported inflation (see Table 2). For example, Dutch investors, for a long time active in foreign markets, hold almost a quarter of their portfolio in foreign equities and bonds, compared with only 2% for U.S. investors.

Equally without surprise, investors from countries with current account surpluses have diversified into foreign securities faster than investors from countries with external deficits. German investors raised their foreign allocation from 9% to15% during 1983-88, while Japanese investors moved from 4% to 6.5%. Over the same period, U.S. investors kept their foreign share unchanged.

Japanese cross-border investment has been the fastest growing. In 1983, Japanese nonofficial holdings were smaller than the United Kingdom's and just half the size of those of the United States; five years later their holdings were more than double the United States' and, at $431 billion, constituted more than a quarter of world cross-border investment. Even so, with only 6.5% of their securities holdings invested abroad, the Japanese remain less diversified than investors in a number of other countries.

Fixed-income diversification

Over the last five years global investors have steadily raised the foreign component of their bond portfolios, while barely maintaining the foreign share of their equity holdings (see Chart 2). At year-end 1988, foreign equity holdings of $573 billion accounted for only 6.7% of world equity capitalization, down from 7.7% prior to the 1987 stock market crash. While the 1987 stock market crash clearly had a negative impact on investor interest in foreign equities, even before 1987 there was only a gradual upward trend in the foreign share of global equity portfolios.

In contrast to equities, foreign bond holdings have grown rapidly from 8% of total bond outstandings in 1983 to over 11% in 1988, reaching a level of $1.1 trillion. This international diversification has been encouraged by a number of developments, including the availability of new instruments to hedge interest and exchange rate risk in foreign markets (futures, options, and swaps), the removal by many countries of withholding taxes on interest paid to nonresidents, and investor-driven product innovations in the Euromarkets. Equally important have been attempts in Europe to promote new international financial centers by fostering increased competition among government bond dealers, screen-based trading, greater liquidity, and improved settlement procedures.

U.S. investors have bucked these trends, increasing the foreign share of their equity portfolio from 1% to 2%, while lower-

Table 2

Nonofficial holdings of foreign securities by residence of investor

	All securities						Equities			Bonds		
	Billions of dollars			% of resident portfolio			% of resident equity portfolio			% of resident bond portfolio		
	1983	1985	1988	1983	1985	1988	1983	1985	1988	1983	1985	1988
Canada*	9	12	16	4	4	4	5	5	5	1	2	2
Germany	42	69	176	9	10	15	13	10	15	7	10	15
Japan	57	185	431	4	8	7	—	—	—	—	—	—
Netherlands	12	21	46	18	19	22	29	24	25	10	15	21
United Kingdom	88	148	267	19	22	22	22	20	20	16	24	25
United States	83	112	157	2	2	2	1	2	2	3	2	2

*The United States reports Canadian nonofficial holdings of U.S. securities (excluding Treasury bonds) of $38 billion at end-1988, suggesting that closer to 10% of Canadian residents' global securities portfolio consists of foreign securities.

ing that of their fixed-income portfolio from 3% to 2%. This growing interest in foreign equities among U.S. investors may be more a catch-up effect, as they had been underinvested in foreign equities relative to investors in other countries.

Government bonds

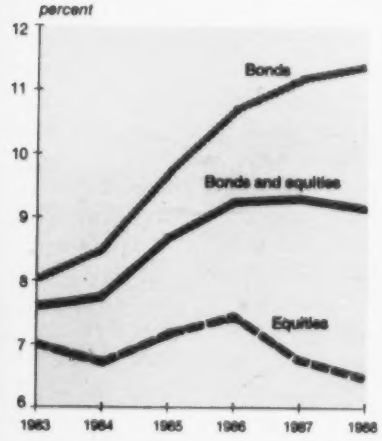
More than half of all cross-border holdings of bonds consists of government bonds, close to 90% of which have been issued in domestic markets, and the rest in the Euromarkets where they are commonly known as sovereigns.* The other half is corporate bonds (including state enterprises), which, except for U.S. domestic bonds, are largely Eurobonds. Although balance of payments data used in this study treat Eurobonds as foreign bonds whenever the issuer is a foreign entity, investors may not always treat them as such. A substantial (but unknown) portion of Eurobonds held outside the country of the issuer's is denominated in the investor's own currency and is thus probably managed as part of a domestic portfolio. German investors, for example, owned more than 20% (DM36 billion) of outstanding Euro-DM bonds issued by non-German entities at the end of last year.

At first glance, investors appear to have a greater preference for government bonds when they invest abroad: government bonds constitute 34% of total cross-border securities investment compared with only 21% of domestic investment. The difference, however, is attributable entirely to holdings of government bonds by central banks as part of their foreign exchange reserves. Official investments in government bonds, valued at around $240 billion at year-end 1988, account for almost half of all foreign-held government bonds. Excluding official holdings, nonofficial investors allocate about the same share of their cross-border securities portfolios to government bonds as they hold in their domestic portfolios.

Central bank investment also explains the apparent attractiveness of U.S. Treasury bonds to cross-border investors. At the end of 1988, U.S. Treasury bonds accounted for about 40% of cross-border holdings of government bonds, significantly higher than their one-third share in global government bond outstandings (see Tables 3 and 4).** About $150 billion in U.S. Treasury bonds are held by foreign central banks, reflecting the dollar's role as the world's prime reserve currency. Nonofficial investors actually "underweight" U.S.

Chart 2

*International portfolio diversification**



*Nonresident holdings of bonds and equities as percent of total outstandings of these assets in eleven major countries.

*The great majority are central government bonds, as local government bonds are generally less liquid and are frequently tailored to domestic investors. U.S. state and local government bonds, for example, are not attractive to foreign investors because their tax-exempt status keeps their yields below those on U.S. Treasury bonds.

**Because of the broad coverage of these data, the outstandings and market shares may differ from other tabulations.

Table 3

*Government bond outstandings**

billions of dollars

	1983		1988	
	Global	Cross border	Global	Cross border
Australia	37	7	52	27
Belgium	41	6	111	14
Canada	104	51	183	94
France	32	1	151	12
Germany	70	7	248	76
Italy	98	2	394	16
Japan	466	27	1,228	44
Netherlands	25	8	80	28
Spain	6	0	41	1
United Kingdom	151	14	232	37
United States	707	91	1,392	236
Total	1 738	213	4,112	583

Table 4

*Government bond outstandings: market shares**

percent

	1983		1988	
	Global	Cross-border	Global	Cross-border
Australia	2	3	1	5
Belgium	2	3	3	2
Canada	6	24	4	16
France	2	0	4	2
Germany	4	3	6	13
Italy	6	1	10	3
Japan	27	13	30	7
Netherlands	1	4	2	5
Spain	0	0	1	0
United Kingdom	9	7	6	6
United States	41	43	34	40
Total	100	100	100	100

*Shares of each country's government bonds in total outstandings and in total cross-border holdings of these bonds.

Treasuries in their portfolios, allocating only a quarter of their foreign government bond portfolios to them.

German, Dutch, Canadian, and Australian government bonds also are more heavily represented among cross-border holdings than in global market outstandings. Foreign holdings of German government bonds grew by a factor of eleven over the last six years, much more than can be explained by the growth in official holdings of DM assets, which tripled over this period, partly reflecting Germany's price stability and strong currency. The attraction of Dutch bonds to international investors is that they are generally perceived to be close substitutes for German bonds, and usually have higher yields. Investor interest in Canadian and Australian bonds stems from their relatively high current yields. Deregulation of the French, Italian, and Spanish government bond markets, meanwhile, is attracting new foreign investment, but because of the low bases from which they started, bonds issued in these markets are still relatively underrepresented in the cross-border portfolio.

Japanese government bonds are severely underweighted in cross-border holdings. At the end of 1988, Japanese government bonds made up only 8% of cross-border holdings of government bonds, down from the 12% average of the previous five years. This is considerably less than their 30% weight in world capitalization. In part this reflects the fact that Japanese investors themselves now account for more than a quarter of world cross-border investment in securities. In addition, many Japanese government bond issues are relatively illiquid.

Growing international diversification of fixed-income portfolios across the world implies that foreign investors are becoming more important players in most domestic capital markets, holding larger shares of outstanding bonds, financing growing portions of public-sector deficits, and more actively trading their investments. Given that bond markets differ considerably in size, however, large cross-border holdings of a country's bonds do not mean foreigners will dominate the local market. U.S. Treasuries, for example, make up a large portion of the cross-border portfolio, yet foreign investors hold a more moderate 17% share of the outstanding U.S. Treasury bonds (see Table 5).

Foreign penetration ratios — averaging 14% for the eleven countries — have risen in all countries except Belgium and Japan. Foreign investors hold less than 5% of outstanding government bonds in Japan, Italy, and Spain, and only 8% in France, although foreign investment has been rising significantly in recent years as the last three have deregulated their domestic bond markets. Foreign investors hold more than 30% of outstanding government bonds in the Netherlands and Germany, and more than half in Canada and Australia.

In terms of flows, rising foreign penetration of national government bond markets implies that foreign investors are taking up an ever-larger portion of the net increase in bonds outstanding in most countries. In the United States, for example, net purchases by foreigners accounted for over 20% of the increase in outstanding Treasury

Table 5

Foreign penetration of national government bond markets

nonresident holdings as percent of outstanding domestic and Eurobonds issued by each country

	1983	1985	1988
Australia	20	33	52
Belgium	14	14	12
Canada	49	52	51
France	3	2	8
Germany	10	17	31
Italy	2	4	4
Japan	6	6	4
Netherlands	33	28	35
Spain	0	0	2
United Kingdom	9	11	16
United States	13	14	17
Total	12	13	14

bonds from 1983 to 1988. In other countries, this ratio varied from nil in Japan, to more than 100% in Australia (see Table 6). Indirectly, foreign investors may actually be financing an even larger portion of public-sector deficits by investing in the private sector and freeing up domestic savings.

Foreign investors also have become active traders in government bonds, in some cases turning over their portfolios about as often as domestic investors (see Table 7). In the U.S. Treasury bond market, foreign investors on average turn over their holdings thirteen times a year, up from only three times in 1983, only slightly less than domestic investors, who show a turnover ratio of fifteen. In Germany foreign investors turned over their holdings four times in 1988, also only slightly less than domestic investors. For Japan, data are available only for the whole bond market (government plus private), and thus understate turnover for the more active government bond market. In 1988, foreign investors turned over their holdings almost three times, less than half as much as Japanese investors.

The J.P. Morgan Government Bond Index

Growing global investment makes precise and timely data on the risk, return, and other characteristics of government bond markets increasingly important. Market indices — measures of the overall performance of each market — are the foundation of informed investment decisions. They serve as a yardstick against which to compare portfolio performance, and are an important tool for asset allocation and risk control. Even the most active investor needs an index as a starting point, or neutral position, from which over- or underweighting decisions are made.

With these needs in mind J.P. Morgan has developed a new investment tool: the J.P. Morgan Government Bond Index. The J.P. Morgan index represents a significant improvement over existing indices. It is updated daily, permitting timely adjustment of portfolios in response to changing market conditions. It is "investable," focusing only on securities that are easily available to the international investor. It is flexible, with a rich array of subindices that can be tailored to the individual investor's needs. And it is precise and transparent. These indices not only serve as a guide to investors, but also are useful as indicators of interest rate levels and total returns in international financial markets.

Table 6

Net foreign purchases of government bonds

as percent of net new issuance

	1983-1988
Australia	143
Belgium	10
Canada	55
France	16
Germany	57
Italy	2
Japan	—2
Netherlands	36
Spain	3
United Kingdom	44
United States	21

Market indices: valuable tools for portfolio management

Bond market indices measure the changing value of fixed-income securities outstanding in a particular market, accounting for capital appreciation, accrued interest, and reinvestment of coupon payments. These indices provide up-to-date information on the risk, return, and interrelationships of different markets,

Table 7

Turnover of bond holdings

annual turnover divided by year-end holdings

	Investors	
	Domestic	*Foreign*
United States (Treasury bonds and notes)		
1983	7.7	2.8
1985	11.5	6.9
1988	14.9	13.1
Germany (all government bonds)		
1983	1.3	1.5
1985	2.2	2.2
1988	5.3	4.3
Japan (all bonds)		
1983	1.2	1.5
1985	5.7	2.3
1988	6.8	2.7

sectors, and maturities. They provide a standard for portfolio managers to compare their performance with an average for the market; serve as neutral allocation guidelines from which to under- or overweight relative to the market; can be tailored to specific investment objectives; and can be used to replicate the market's performance. In the United States, the majority of bond portfolio managers rely on indices for performance measurement and decision making. The practice is extensive in the United Kingdom, is spreading in Europe, and is becoming popular in Japan.

Measuring the performance of a portfolio manager against a market index is now an integral part of the international investment scene. An investment record against a widely accepted index has become the most important part of a portfolio manager's resume when competing for money to manage. Performance should be measured by more than simply comparing the portfolio's return with that of the total market index. Normally, a manager can achieve a higher return than the market by taking on more risk than the average in the overall market.* The growing awareness of the importance of risk control has led many investment sponsors to put limits on the amount of excess risk a manager is allowed to undertake.

More generally, a manager should be evaluated relative to the stated objectives and constraints of the fund. This can be done by comparing the fund's performance with that of a customized index that meets the risk, liquidity, maturity, and other long-run objectives of the fund. For example, a central bank would not want to evaluate its performance against a total market index, but might instead prefer an index comprised mainly of shorter-term and more liquid issues in the world's major reserve currencies. Similarly, investors venturing into the global arena for the first time may prefer an index that combines a high weight on their domestic issues with only the benchmark issues from a selection of other markets.

Market indices not only enable portfolio managers to compare their performance against the market, but are also useful to select securities and to allocate assets across broad markets. The "passive" investor uses the composition of the index to determine what securities to buy and sell. Rather than try to outsmart the market, such an investor tries to match the long-term performance of particular capital markets. An index investor, the purest form of a passive manager, tries to replicate the performance of the market index exactly. Index investing differs from a traditional buy-and-hold strategy, however, because it can involve active trading as investors regularly recalibrate their holdings to track the changing risk and return characteristics of the market they follow.

The appeal of passive investment strategies originally derives from studies showing that, in large part, U.S. financial markets are priced "efficiently," suggesting that it would not be possible systematically to outperform the market.** This appeal is also a

*In the United States, a standard way to adjust the return on a portfolio for risk taken is to deflate that portion of the return in excess of the market's by the standard deviation of this excess return.

**Despite a general presumption of market efficiency, finance specialists keep finding "anomalies" in U.S. markets, that is, pricing in particular markets not consistent with market efficiency.

response to the fact that about three-quarters of all U.S. fixed-income managers have underperformed the market over the last ten years, after transaction costs. Passive investors thus minimize the risk of falling short of the market return and avoid the higher turnover costs and fees associated with active management. Close to 15%, or $375 billion, of U.S. pension funds' investment in bonds and equities is indexed, with close to $70 billion in some type of bond index fund, up from almost nothing five years ago.

In the global context, the case for purely passive strategies is not as well established. Evidence on market efficiency outside the United States — particularly in smaller markets — is not conclusive. Even more, there is strong evidence that national markets are not priced efficiently *with respect to one another.* For example, numerous studies show that international interest rate differentials do not fully reflect expected exchange rate changes, suggesting differences in expected returns across countries have not been fully arbitraged away. The view that markets are priced efficiently within national borders but not across borders suggests a possible strategy of passive investment in national market indices, but active allocation of funds among national markets.

Passive international investment has some appeal for other reasons as well. A passive strategy could be a comfortable first move into international markets. Also, large investors sometimes feel that it is difficult for them to move funds aggressively in smaller markets. Using market capitalization as a basis for allocating funds within and between markets is one way to avoid this problem. So far, only an estimated $1 billion of U.S. pension funds has been committed to international government bond index funds. A bigger demand for these strategies seems to be coming from non-U.S. investors, particularly the Japanese and central banks.

Investors who follow active strategies also use market indices for asset allocation, as well as for other purposes. Active investors may use security analysis and economic or fundamental research to identify undervalued markets, sectors, and individual securities in an effort to outperform the market. An active investor will not duplicate the total market index, but uses the composition of the index as a "neutral" position from which decisions on over- or underweighting particular markets, sectors, and maturities are taken.

For managers who rely on asset allocation models, the indices' historical risk and return measures and market correlations are critical inputs for investment decisions. These statistical parameters along with asset-return forecasts determine the structure of the portfolios. They are also crucial to any initial analysis of the perceived benefits to international diversification. In particular, the lower the correlation between asset values in the home and foreign markets, the stronger the case for diversifying abroad.

A new bond index

To meet the growing need of international fixed-income investors for accurate and useful global bond indices, J.P. Morgan has developed a new index, the J.P. Morgan Government Bond

Table 8

Index composition

Market coverage	
Countries	Australia, Belgium, Canada, France, Germany, Italy, Japan, Netherlands, Spain, United Kingdom, United States
Bond types	Straight, put, call, sinking fund, purchase fund, extendibles, conversions, double-dated
Coupon	Fixed-rate only
Liquidity	Benchmark, actively traded, regularly traded; less active and illiquid bonds are excluded
Maturity	Minimum remaining maturity of 1 year; no perpetuals
Indices	
Types	Total, principal, and interest return
Maturity sectors	1-3, 3-5, 5-7, 7-10, 10+ years
Statistics	Yield, duration, convexity, remaining maturity, average coupon
Currency	Local currency, any base currency
Global aggregates	Select capitalization: benchmark, active, traded: weighted by market value Eligible market-cap: traded indices weighted by market size of eligible universe Nondomestic-currency index for each market: select capitalization by liquidity; eligible market-cap for traded indices Selected market/sectors with the client's own weights
Characteristics	
Base	December 31, 1987=100
Frequency	Daily back to December 31, 1985; monthly back to January 1, 1979 (only medium- and long-term bonds)
Pricing	Local market closing bid prices (fixings when appropriate)
Security weighting	Gross market value; net market value for principal return
Capital changes	Amounts outstanding updated at the beginning of the month
Reinvestment	Daily, fully invested in index

Index. The index focuses on government bonds because they are generally the largest and most liquid sector of the domestic bond markets. Government bond prices are used as a benchmark from which other fixed-income securities — both domestic and Euro — are generally priced. And government bonds are the most uniform instruments internationally, in the sense that in each country these securities enjoy the highest credit standing.

Returns and risks within global fixed-income portfolios depend in large part on currency and interest rate factors. Given the overriding importance of these factors in cross-border allocation decisions, multicurrency bond managers usually focus on government bond markets because they place a premium on liquidity and credit quality. Some see relatively limited gains in going beyond the higher quality instruments in each national market.

The J.P. Morgan Government Bond Index represents significant improvement over existing bond indices in at least four crucial respects. First, it measures a market composite of investable issues only, those in which an investor can deal in size at short notice and at acceptable bid-ask spreads. Second, the index is based on daily price quotations and exchange rates, and is available within hours of market closing. This permits ongoing reassessment of market conditions and changing cross-market correlations, and facilitates timely portfolio adjustments. Third, the index is precise and transparent: price data are carefully gathered and checked; exact local market conventions are observed in settlement and accrued interest calculations; and the associated index statistics, such as yield, duration, and convexity, are comparable across markets. Fourth, the index is disaggregated into over 700 subindices and statistics that can be combined to fit the country, currency, maturity sector, and liquidity preferences of investors. The coverage and full range of available subindices, as well as their essential characteristics, are summarized in Table 8.

The index covers eight major government bond markets with established appeal among international investors: Australia, Canada, France, Germany, Japan, Netherlands, United Kingdom, and United States. It also covers three smaller markets — Belgium, Italy, and Spain — that have developed a significant international following in the last few years as they offer high yields

Table 9

Profile of the J.P. Morgan Government Bond Index

November 1, 1989

		Australia	Belgium	Canada	France	Germany	Italy	Japan	Netherlands	Spain	United Kingdom	United States	Global
		CGSs	BGBs	Canadas	OATs, BTANs, EEs	Bund, Bahn Post, Kassen, Bobls	BTPs, CTOs	JGBs	DSLs	Bonos y obligaciones	Gilts	Treasuries	
Number of issues	Traded	23	13	39	30	52	8	42	37	7	25	142	418
	Active	16	6	22	17	29	4	10	21	3	25	21	174
	Bench	7	1	8	4	2	1	1	1	1	8	7	41
Par value ($ billion)	Eligible	23	83	93	136	180	88	536	94	26	157	1155	2571
	Traded	17	37	58	82	100	32	318	65	22	77	1071	1879
	Active	14	18	37	58	62	19	116	40	12	77	205	658
	Bench	7	2	15	18	5	9	14	2	7	30	71	181
Market value ($ billion)	Eligible	22	86	97	137	177	87	545	94	26	160	1268	2699
	Traded	16	38	60	82	99	32	325	66	21	78	1176	1995
	Active	13	18	38	58	61	19	115	40	12	78	215	668
	Bench	7	2	16	17	5	9	14	2	7	31	72	181
Market weight (percent)	Eligible	0.8	3.2	3.6	5.1	6.6	3.2	20.2	3.5	0.9	5.9	47.0	100
	Traded	0.8	1.9	3.0	4.1	5.0	1.6	16.4	3.3	1.0	3.9	58.9	100
	Active	2.0	2.6	5.8	8.6	9.2	2.8	17.3	5.9	1.8	11.8	32.3	100
	Bench	4.0	0.9	8.8	9.4	2.7	4.9	7.5	1.2	3.7	17.2	39.8	100
Coverage ratio*		75	45	62	60	56	37	60	70	82	49	93	74
Average coupon (percent)	Traded	12.6	8.9	10.0	8.9	6.5	12.5	5.5	7.1	11.6	10.7	9.7	8.8
	Active	12.5	8.1	9.6	8.9	6.5	12.5	4.9	6.9	12.2	10.7	8.6	7.9
	Bench	12.5	8.3	9.6	8.7	6.9	12.5	4.6	7.5	12.5	10.9	8.1	8.7
Average maturity (years)	Traded	5.5	5.4	8.7	7.8	6.5	3.2	6.5	5.8	2.7	8.5	8.3	7.6
	Active	5.7	6.8	8.6	9.3	7.6	3.1	8.0	7.1	2.6	8.5	8.3	7.9
	Bench	7.1	9.6	10.7	11.3	7.1	2.9	8.6	10.0	3.0	7.6	8.4	8.2
Yield** (percent)	Traded	14.2	9.1	9.5	9.1	7.3	13.6	5.4	7.6	13.9	10.6	7.9	7.8
	Active	14.2	9.0	9.5	9.0	7.3	13.6	5.3	7.5	13.9	10.6	7.9	8.0
	Bench	13.9	9.0	9.4	8.9	7.2	13.5	5.3	7.5	13.9	10.7	7.9	8.7
Duration (years)	Traded	3.6	4.2	5.2	5.1	5.2	2.5	5.3	4.7	2.2	5.2	4.7	4.8
	Active	3.7	5.2	5.2	5.8	5.9	2.4	6.5	5.5	2.1	5.2	4.7	5.2
	Bench	4.4	6.7	6.1	6.7	5.6	2.3	7.0	7.4	2.4	4.7	4.9	5.1
Convexity (percent)	Traded	19.3	23.0	43.8	39.5	34.6	7.6	37.2	29.5	6.0	40.8	46.4	41.4
	Active	20.0	31.8	44.0	48.7	42.9	7.1	49.3	38.6	5.4	40.8	46.4	42.8
	Bench	26.5	52.3	57.9	62.0	39.3	6.3	56.3	63.4	6.5	34.5	47.7	43.9

*Coverage ratio is defined as the traded market value divided by the total market size (eligible universe).
**Yields: annual for Belgium, France, Germany, and Spain; annual equivalent life for Netherlands; semiannual for all others.

and display low correlations with certain other markets, particularly with the U.S. market, thus providing attractive diversification opportunities. The Swiss government bond market is excluded from the index universe because of stale prices and bond unavailability. Other markets will be added in the future as they gain liquidity and provide opportunities for further diversification. Table 9 provides a convenient profile of the entire index universe.

The J.P. Morgan index is useful not only as an investment tool, but as an indicator of developments in international bond markets. Thus, the index's total return measures and yield statistics

Table 10
Eligible universe

Markets	Eligible instruments	Excluded	Special features
Australia	Commonwealth issues	Index-linked	Reopenings
Belgium	State and Road Fund issues, including OLOs		Callables, putables, purchase funds, dual coupons, reopenings
Canada	Canadian governments		Reopenings, purchase funds
France	OATs, BTANs, Emprunts d'Etat	Index-linked, perpetuals, FELINs, ORTs, FRNs	Extendibles, sinking funds, reopenings
Germany	Bunds, Bahn, Post (Anleihen); Kassenobligationen; Bundesobligationen		
Italy	BTPs, CTOs	CCTs, CTEs	Putables
Japan	10- and 20-year JGBs; 2-, 3-, and 4-year medium-term notes	Private placements, medium-term discounts	Callables, reopenings
Netherlands	Dutch State Loans	Perpetuals, private placements	Sinking funds, callables
Spain	Bonos and Obligaciones		Callables, putables, reopenings
United Kingdom	Gilts, including convertibles	Index-linked, irredeemables	Double dates, reopenings, conversion stocks
United States	Treasury notes and bonds	Flower bonds, STRIPs, foreign-targeted issues	Callables, reopenings

will henceforth be included in the regular statistical appendix of *World Financial Markets*. The special appendix to this issue provides a detailed listing of country and global total return indices since December 31, 1985.

Focus on Investable Instruments

Within each market, the J.P. Morgan index includes only instruments that are truly accessible to international investors. This first stage of index screening is designed to insure that each "eligible" instrument is at least potentially attractive to international investors. Only fixed-rate issues that are tradable and redeemable for cash are included. Also, the security must not appeal exclusively to certain classes of domestic investors for local tax or regulatory reasons. Thus, index-linked issues and floaters, perpetuals or irredeemables, private placements, and special instruments such as flower bonds in the United States and medium-term discounts in Japan are all excluded (see Table 10).

The second, and equally important, stage of screening is to insure that each eligible issue meets certain liquidity criteria: in essence, it must be regularly traded in size at acceptable bid-ask spreads. This assures that investors can "replicate" the return on the index. J.P. Morgan professionals in each market apply the liquidity guidelines shown in Table 11 to separate all eligible issues into four increasingly broader categories: benchmark, active, traded, and eligible. Then indices are built to track the benchmark, active, and traded issues. Overall, about 7% of eligible U.S. Treasuries and almost half of eligible non-U.S. government bonds are excluded because of thin trading and unreliable pricing (see Table 12).

Trading activity often dictates which issues to include. In the German government bond market, for example, *Bundesanleihen* are considered liquid enough among the medium- and long-term issues, while *Bundesobligationen* are the most liquid of the short maturities. Although the

Table 11
Liquidity guidelines

Benchmark issues
- Widely recognized market indicator
- Issue with high trading volume
- Recent sizable issue
- Current coupon issue
- Often latest or most recently reopened issue
- Usually only one in any given maturity sector

Active issues

Benchmark issues plus other issues
- With significant daily turnover
- That may have been a benchmark earlier
- That are actively quoted side issues
- So that the universe spans the yield curve

Traded issues

Active issues plus other issues
- With prices changing regularly
- For which a two-way market exists
- That are available for investment

Table 12

Aggregate market value of eligible universe

billions of dollars, November 1, 1989

	Traded issues	Eligible issues	Traded as % of eligible
Australia	16	22	75
Belgium	38	86	45
Canada	60	97	62
France	82	137	60
Germany	99	177	56
Italy	32	87	37
Japan	325	545	60
Netherlands	66	94	70
Spain	21	26	82
United Kingdom	78	160	49
United States	1176	1268	93
Non-United States	819	1431	57
Global	1995	2699	74

Table 13

Bid-ask spread by liquidity

basis points

	Benchmark	Active less benchmark	Traded less active	Rest of market
Australia	8	14	20	160
Belgium	10	18	25	40
Canada	10	15	25	65
France	10	18	25	40
Germany	5	10	15	30
Italy	5	6	13	30
Japan	8	18	20	50
Netherlands	8	14	20	75
Spain	5	10	15	75
United Kingdom	6	11	16	35
United States	3	4	6	13
Non-United States	8	13	20	45

same criteria are generally applied in each country, variations across markets exist. For example, a benchmark bond in the Japanese market and one in another market may not be identical in terms of the criteria in Table 11. The assignments, although appropriate and uniform in the context of a single national market, must be regarded as comparable rather than strictly identical in a global context.

Illiquid issues are excluded from the index for a number of reasons. For one, transactions in these issues are often time consuming and involve wide bid-ask spreads, making transactions difficult and expensive. As the share of illiquid issues in an index rises, the transaction costs associated with portfolio turnover increase dramatically (see Table 13). In addition, the inclusion of illiquid issues can bias the measurement of the return and risk profile of the investable market. Price quotations are not dependable: they are either stale, unrealistically "matrix-priced," or not indicative for large transactions. These factors can result in "price runs" with identical prices reported over a period of time. Price runs distort measures of risk and return, understating risk estimates, and making portfolio strategies unreliable and costly.

Emphasis on liquidity, however, could be problematic if it entails numerous and frequent changes in the composition of the index. Generally, however, once a bond is deemed liquid it usually stays so. On average, a bond stays in the index for 48 months (see Table 14). To avoid excessive turnover in any market, a bond must stay in the index for at least six months. Therefore, analysts need not worry that a changing bond list would cause excessive changes in the statistical characteristics of the index. Likewise, index investors need not be concerned that changes in the bond list would necessitate excessive rebalancing.

Moreover, the J.P. Morgan indices are less expensive to track than other indices since the lower bid-ask spreads more than compensate for any additional turnover. For example, Table 15 summarizes the first year transaction costs for establishing and rebalancing a non-U.S. global index fund that tracks the index by fully replicating it. The all-in first year cost for a non-U.S. traded index is 22 basis points, about half the cost when fully replicating a total market index fund that includes illiquid issues.

Pricing, weighting, and settlement calculations

An index, however complex its calculations, is no better than the quality of the prices used in the formulas. For the J.P. Morgan Government Bond Index, each issue's net price is a closing transaction price supplied either by J.P. Morgan in its capacity as market maker, or by the local stock exchange's daily official fixing when appropriate.

For each of the eleven markets covered, the indices are first calculated in terms of local currency. To simplify the comparison of performance across markets in a common currency, the midpoint of bid and offer spot exchange rates corresponding to the daily London market close are used. During volatile periods in foreign exchange markets, however, time zone differences can introduce discrepancies on the order of a full percentage point or more in the calculation

Table 14

*Estimated average stay in the index**

months

	Traded universe		Total market
	Mean	Standard deviation	median
Australia	82	13	78
Belgium	40	18	56
Canada	42	19	66
France	47	18	55
Germany	42	20	45
Japan	48	23	77
Netherlands	45	19	54
United Kingdom	64	26	96
United States	47	18	59
Non-United States	54	21	68
Global	48	19	64

*Italy and Spain are excluded from the estimates due to their recent inclusion in the index.

Table 15

Transaction costs for a non-U.S. index fund

basis points

	Start-up		Annual rebalancing	
	Traded*	Market**	Traded*	Market**
Australia	13.3	69.8	2.3	21.8
Belgium	20.8	30.9	11.5	10.1
Canada	18.0	23.4	5.7	8.6
France	18.5	26.4	4.5	9.1
Germany	12.0	20.0	5.5	5.4
Japan	19.0	35.0	4.8	7.6
Netherlands	17.4	43.3	5.5	13.0
Spain	7.2	44.2	6.4	15.2
United Kingdom	9.9	24.5	4.3	1.7
Non-United States	16.8	31.4	5.5	7.6

*Traded indices are weighted by market capitalization of traded universe.
**Market indices are weighted by total market capitalization.

of monthly currency returns. Although most investors prefer the London close as their standard, the J.P. Morgan index can be customized to use exchange rates taken at other times.

Carefully designed formulas are used to measure the precise change in the value of a bond portfolio on a daily basis. Each market index is calculated by multiplying the previous day's index value by one plus a weighted average of the returns on all bonds in the current day's index. The weights are the proportion of total market value on the previous business day accounted for by each bond and are called market-cap shares. These formulas neutralize the effects of changes in principal amounts and a changing bond list so that these events do not introduce an artificial profit or loss to the index.

On the first of each month the index is adjusted to account for changes in the amounts of outstanding bonds due to new issues, purchase and sinking fund redemptions, reopenings, buy-ins, reverse auctions, or STRIP activity. For example, adjusting for STRIPS (and reconstitutions) in the U.S. market lowered the weight for the long end by 4% for 1988. Ignoring these adjustments would have overstated the returns in the U.S. Treasury market by 30 basis points.

The index carefully treats ex-dividend rules and the timing of coupon payments; it is the only daily global index with detailed components that does so. Most indices ignore ex-dividend rules and only approximate accrued interest, the settlement dates for trades, and the timing of coupon receipts. Depending on the approximations used, the result can be significant errors in calculating index returns. J.P. Morgan's calculations use actual cash flows and precise measures of accrued interest, taking into account domestic settlement procedures and ex-dividend date conventions in each market. A comprehensive set of bond market calendars is used to adjust all future cash flows to fall on the appropriate business day, thereby providing a precise foundation for calculating "true" measures of value. The market algorithms for determining interest value dates and trade settlement dates are driven by these calendars as well.

The J.P. Morgan index assumes that coupons received during the month are immediately reinvested into the country or sector index in proportion to the latest market values of the constituents. Thus, each country or sector index is fully invested at all times, which is possible only because the index is based on daily price quotations and is recalculated daily. Monthly indices must assume that a coupon paid during the month is held as cash or reinvested at some arbitrary rate until the next index rebalancing date.*

Aggregation and available statistics

The J.P. Morgan *global* indices are weighted averages of the eleven country indices, using the appropriate market size as weights. The global benchmark index, for example, uses the daily market value of outstanding benchmark issues in each country as weights (see Table 9). In-

*The complete methodology for all calculations is set out in the *J.P. Morgan Government Bond Index: Technical Document.* Institutional investor clients interested in this document should contact J.P. Morgan's bond index specialists.

vestors who are accustomed to using total market size — including illiquid issues — as weights are provided this alternative. To avoid having unreliable price data on illiquid issues affect the index, for each country the change in total market value is calculated each day in proportion to the change in the market value of traded issues only.

One particular characteristic of the global index is that coupons are reinvested into the same currency market until the index is rebalanced at the beginning of the next month. In this way, an investor can construct a customized index from the same country indices used in a manner consistent with the standard global and international indices.

For the global indices and each subindex, statistics are calculated as shown in Table 9. Individual bond yield, duration, and convexity statistics are based on true internal rates of return with the actual time to each cash flow used in discounting back to the settlement date. Individual yields are reported on either a semiannual or annual basis, depending on market convention. The formulas account for bonds with serial redemption schedules (such as Dutch serial). When bonds have put or call options, the index calculations always assume the issuer or investor takes the option that is most advantageous.

Within-market averages for duration, convexity, and remaining life are computed as market-value-weighted averages of the individual statistics for all the bonds in the index. However, both yield and average coupon statistics are duration-weighted — each bond's market value is adjusted by the bond's duration divided by the duration of the index. This produces a close approximation of the "true" portfolio yield and average coupon. For across-market statistics, the same market-value-weighted formulas are used as for within-market statistics since most international investors are used to these simple aggregation schemes. However, while within-market yields are expressed on either a semiannual or an annual basis, depending on market convention, cross-market yields are reported on a consistent semiannual basis.

New tables for the statistical appendix

The J.P. Morgan Government Bond Index is useful not only to investors, but to anyone interested in world financial markets. With this in mind, government bond yields and total return indices are now included in the regular statistical appendix of this publication. The data are reported for the last business day of each month and for the most recent day and include all eleven countries. The yields are presented on a comparable semiannual basis, covering a range of maturities. Total return indices are reported for each country in both local currency and dollars. The global index covering all eleven countries and its non-U.S. component are also shown.

Special appendix

J.P. Morgan Government Bond Index, 14

Government bond yields, 15

Historical total return indices,
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Information herein is from sources considered to be reliable but is furnished without responsibility on the part of Morgan Guaranty Trust Company.

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J.P. Morgan Government Bond Index

Index of total return for traded bonds, December 31, 1987=100
end of month

	1988	1989										
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov 15
In local currencies												
Australia	109.77	109.11	109.01	110.20	112.32	111.33	114.18	116.12	119.03	116.76	118.57	120.45
Belgium	108.72	109.17	108.47	109.07	110.61	110.95	111.71	112.44	113.23	113.05	112.08	112.06
Canada	109.08	110.60	108.74	110.15	113.12	115.95	119.09	120.94	119.67	118.98	121.87	122.40
France	116.24	116.53	114.23	116.37	118.41	118.70	120.02	123.16	123.58	121.63	121.54	121.89
Germany	105.23	104.32	103.05	104.00	104.97	104.52	106.17	107.64	107.04	106.50	106.23	105.10
Italy	111.62	112.05	112.54	113.27	114.98	115.98	117.33	118.79	120.28	121.59	122.37	122.69
Japan	105.89	105.73	104.53	104.62	104.76	104.32	103.92	105.95	106.12	106.09	104.87	104.43
Netherlands	106.06	104.89	103.26	104.20	104.84	103.82	105.80	107.11	106.96	106.47	106.33	105.36
Spain	109.73	110.47	110.87	111.75	112.72	113.54	114.64	115.79	117.24	118.44	119.22	119.41
United Kingdom	106.74	109.56	109.04	109.58	110.04	108.91	109.97	114.11	114.20	112.18	113.51	113.42
United States	106.78	108.08	107.23	107.94	110.18	112.73	116.44	118.84	116.84	117.36	120.32	121.27
In dollars												
Australia	129.84	134.43	120.72	125.08	123.57	115.97	119.48	122.26	125.91	125.63	128.58	130.84
Belgium	96.23	91.23	93.25	90.23	92.22	88.26	89.97	94.65	90.76	94.52	95.61	95.74
Canada	118.89	121.44	117.85	119.98	123.97	124.99	129.38	133.16	132.13	131.34	134.92	135.70
France	102.22	97.12	97.91	96.78	99.10	94.18	96.29	103.85	99.13	101.81	103.65	103.51
Germany	93.36	87.22	88.71	86.06	87.62	82.98	85.35	90.71	85.46	89.21	90.68	89.48
Italy	98.97	94.95	97.21	94.50	96.83	93.94	96.26	102.92	99.14	103.15	105.14	105.10
Japan	102.63	98.24	99.71	95.38	95.45	88.71	87.54	93.73	88.56	92.21	89.02	87.86
Netherlands	93.69	87.39	88.60	86.03	87.29	82.34	84.91	89.98	85.25	88.90	90.48	89.47
Spain	103.91	102.41	104.13	101.87	103.82	96.80	99.11	106.37	102.73	106.84	109.76	109.56
United Kingdom	102.47	101.79	100.87	97.93	98.57	90.83	90.53	100.71	94.97	96.12	95.10	94.98
United States	106.78	108.08	107.23	107.94	110.18	112.73	116.44	118.84	116.84	117.36	120.32	121.27
Global	105.43	104.46	104.31	103.45	105.16	104.14	106.52	110.80	107.58	109.32	110.74	110.94
Global excluding United States	102.09	98.15	98.86	96.00	97.05	91.44	92.16	98.55	93.84	96.94	96.47	95.78

Government bond yields

by maturity sectors in years, for traded bonds included in the J.P. Morgan Government Bond Index
in percent per annum (semiannual basis), at end of month

	1987	1988	1989										
	Dec	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov 15
Australia													
1-3	11.38	13.78	14.51	14.91	14.95	14.67	15.44	15.00	14.78	14.43	15.48	15.49	15.07
3-5	11.97	13.71	14.36	14.66	14.62	14.37	15.06	14.47	14.28	13.88	14.82	14.68	14.33
5-7	12.51	13.34	13.77	14.10	14.14	13.92	14.45	14.08	13.92	13.52	14.38	14.28	14.02
7-10	12.89	13.08	13.45	13.76	13.82	13.56	14.10	13.75	13.62	13.10	13.91	13.79	13.53
10+	12.98	13.00	13.36	13.61	13.59	13.34	13.86	13.45	13.34	12.93	13.65	13.50	13.23
Belgium													
3-5	7.91	7.82	7.93	8.30	8.40	8.20	8.37	8.39	8.36	8.30	8.62	9.08	9.25
5-7	8.09	8.00	8.05	8.35	8.38	8.20	8.25	8.24	8.24	8.26	8.42	8.81	8.87
Canada													
1-3	9.75	10.60	10.61	11.59	11.51	10.81	10.46	9.87	9.71	10.33	10.34	10.07	10.38
3-5	9.84	10.38	10.29	11.07	10.99	10.35	10.02	9.54	9.30	9.88	10.10	9.91	9.90
5-7	10.08	10.24	10.18	10.77	10.67	10.16	9.77	9.38	9.16	9.64	9.95	9.64	9.58
7-10	10.03	10.22	10.09	10.61	10.53	10.11	9.72	9.32	9.17	9.56	9.83	9.55	9.50
10+	10.12	10.21	10.03	10.37	10.28	10.02	9.74	9.42	9.27	9.50	9.78	9.40	9.38
France													
1-3	9.10	8.16	8.46	9.13	8.77	8.54	8.75	8.77	8.40	8.48	8.94	9.18	9.30
3-5	9.40	8.32	8.51	9.17	8.89	8.61	8.76	8.75	8.28	8.39	8.88	9.20	9.17
5-7	9.60	8.26	8.41	8.98	8.72	8.53	8.65	8.60	8.15	8.25	8.75	8.99	8.94
7-10	9.69	8.38	8.48	8.99	8.77	8.52	8.62	8.52	8.14	8.23	8.64	8.75	8.78
10+	9.75	8.57	8.56	9.09	8.93	8.69	8.76	8.66	8.29	8.34	8.76	8.82	8.82
Germany													
3-5	4.85	5.87	6.39	6.91	6.77	6.72	6.96	6.80	6.58	6.86	7.15	7.40	7.62
5-7	5.71	6.21	6.54	6.91	6.82	6.76	7.01	6.81	6.60	6.85	7.07	7.27	7.55
7-10	6.25	6.44	6.60	6.87	6.85	6.75	6.92	6.70	6.55	6.77	6.95	7.09	7.36
Italy													
1-3	10.90	11.40	11.97	12.17	12.62	12.41	13.28	13.37	13.46	13.43	13.42	13.60	13.70
3-5	10.62	12.74	13.02	13.28	13.49	13.37	13.51	13.36	13.32	13.35	13.33	13.60	13.71
Japan													
1-3	3.82	3.88	3.95	4.52	4.68	4.72	5.08	5.09	4.98	5.00	5.23	5.64	5.92
3-5	4.09	3.94	4.07	4.60	4.70	4.73	5.00	5.16	4.93	5.00	5.15	5.55	5.74
5-7	4.38	4.04	4.20	4.59	4.72	4.75	4.88	5.13	4.84	4.90	4.99	5.33	5.49
7-10	4.84	4.62	4.67	4.85	4.90	4.96	5.11	5.25	4.92	4.97	5.05	5.33	5.42
10+	5.62	4.94	4.94	4.96	5.06	5.07	5.19	5.17	5.19	5.19	5.12	5.33	5.46
Netherlands													
1-3	5.13	5.99	6.46	7.15	7.02	7.03	7.39	7.15	7.00	7.21	7.45	7.79	8.05
3-5	5.89	6.07	6.53	7.07	6.95	6.94	7.30	7.05	6.87	7.06	7.34	7.53	7.81
5-7	5.99	6.13	6.56	7.02	6.97	6.94	7.31	7.01	6.84	7.02	7.27	7.42	7.73
7-10	6.23	6.34	6.63	7.03	7.00	6.98	7.32	7.00	6.87	7.02	7.20	7.36	7.62
Spain													
1-3	13.62	12.78	13.00	13.16	13.39	13.45	13.46	13.46	13.50	13.42	13.47	13.63	13.75
3-5	14.70	11.79	12.08	12.18	12.21	12.27	12.60	12.80	12.73	12.73	12.93	12.32	13.13
United Kingdom													
1-3	9.17	11.32	10.79	11.30	11.22	11.40	11.96	11.90	11.10	11.31	12.42	11.98	12.16
3-5	9.25	10.72	10.25	10.66	10.67	10.80	11.20	11.10	10.36	10.55	11.34	11.11	11.26
5-7	9.46	10.58	10.13	10.42	10.46	10.57	10.93	10.91	10.27	10.44	11.12	10.96	11.05
7-10	9.63	10.23	9.82	10.06	10.12	10.23	10.59	10.56	9.99	10.13	10.64	10.58	10.69
10+	9.67	9.79	9.52	9.72	9.81	9.79	10.12	10.09	9.64	9.76	10.15	10.15	10.24
United States													
1-3	7.69	9.14	9.12	9.57	9.77	9.24	8.84	8.11	7.62	8.40	8.46	7.92	7.71
3-5	8.19	9.15	9.11	9.50	9.64	9.15	8.77	8.10	7.58	8.35	8.43	7.91	7.76
5-7	8.50	9.19	9.08	9.44	9.48	9.11	8.71	8.12	7.67	8.33	8.40	7.95	7.81
7-10	8.76	9.18	9.03	9.37	9.35	9.06	8.66	8.14	7.78	8.31	8.37	7.97	7.86
10+	8.99	9.11	8.94	9.26	9.23	9.02	8.69	8.15	7.97	8.34	8.38	8.02	7.98

Historical total return indices — traded

Country indices in local currencies; December 31, 1987 =100.

	Australia	Belgium	Canada	France	Germany	Italy	Japan	Netherlands	Spain	United Kingdom	United States
Dec 31, 1985	70.01	78.87	81.71	83.17	87.61		85.77	86.20		77.65	84.54
Jan 31, 1986	72.84	79.47	81.24	84.42	88.21		85.65	86.33		77.17	85.04
Feb 28, 1986	75.25	80.74	84.10	88.47	90.33		87.52	87.26		80.58	88.74
Mar 31, 1986	79.55	84.29	88.45	92.77	91.61		88.89	89.36		86.51	92.19
Apr 30, 1986	81.93	88.76	88.65	95.94	93.59		89.27	90.48		88.61	92.67
May 30, 1986	81.78	87.21	87.38	95.93	92.05		87.78	90.00		87.72	90.41
Jun 30, 1986	81.81	88.04	90.23	96.97	92.50		88.69	90.81		87.18	93.50
Jul 31, 1986	77.48	89.94	91.09	98.35	93.54		89.35	91.73		86.86	94.13
Aug 29, 1986	78.41	91.35	92.96	100.43	94.82		90.37	93.44		88.11	96.95
Sep 30, 1986	79.92	91.44	91.81	99.55	93.91		89.95	92.99		82.33	95.33
Oct 31, 1986	82.32	92.10	93.06	98.15	93.35		90.75	92.84		83.08	96.63
Nov 28, 1986	82.88	92.28	95.13	96.25	94.71		91.43	93.16		82.66	97.78
Dec 31, 1986	84.14	92.17	96.26	94.88	95.17		92.32	93.01		86.23	97.87
Jan 30, 1987	83.66	93.38	99.20	96.24	96.32		93.80	94.93		88.49	98.95
Feb 27, 1987	83.22	93.99	99.19	97.27	96.33		95.32	94.98		91.79	99.68
Mar 31, 1987	87.07	95.10	100.38	99.37	98.39		96.83	95.89		95.03	99.02
Apr 30, 1987	89.16	96.05	96.58	99.70	99.29		98.86	96.09		97.46	96.59
May 29, 1987	90.40	96.16	97.24	99.12	100.01		99.03	96.79		98.53	96.23
Jun 30, 1987	92.34	96.84	98.04	98.23	98.27		96.25	96.47		97.06	97.33
Jul 31, 1987	93.27	98.10	95.80	98.04	97.61		94.89	96.43		94.59	97.09
Aug 31, 1987	94.73	98.52	95.20	97.58	97.19		96.33	96.74		92.69	96.44
Sep 30, 1987	98.05	97.66	93.92	94.85	95.99		93.61	95.38		94.05	94.55
Oct 30, 1987	93.99	97.48	99.67	97.64	98.18		97.29	97.57		99.14	98.32
Nov 30, 1987	96.96	99.48	98.15	99.78	99.94		98.35	99.45		100.77	98.78
Dec 31, 1987	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Jan 29, 1988	102.80	101.96	104.46	103.95	100.65	100.51	101.11	101.37	102.14	101.72	103.23
Feb 29, 1988	103.72	103.99	105.34	106.28	102.57	101.46	101.62	102.63	103.95	103.03	104.29
Mar 31, 1988	106.52	104.11	104.64	105.60	102.92	102.53	102.53	103.47	105.07	105.01	103.26
Apr 29, 1988	108.85	104.82	103.93	106.60	101.93	103.16	103.25	103.23	104.80	104.48	102.67
May 31, 1988	105.79	104.20	105.06	108.52	101.64	104.02	102.01	103.28	107.12	105.08	101.89
Jun 30, 1988	108.67	105.45	106.57	110.57	102.06	104.94	101.19	102.84	107.39	103.51	104.13
Jul 29, 1988	109.39	105.18	105.99	110.58	101.12	105.53	101.48	102.47	108.18	104.30	103.47
Aug 31, 1988	110.46	105.11	104.96	110.05	101.84	106.26	100.16	103.07	109.22	102.97	103.61
Sep 30, 1988	110.16	106.61	107.50	113.04	103.80	107.55	101.81	104.81	108.00	105.64	105.90
Oct 31, 1988	111.25	107.94	109.79	114.96	106.06	109.29	104.42	106.34	109.07	107.91	107.65
Nov 30, 1988	110.64	108.10	108.80	114.97	105.48	110.57	105.63	106.15	109.61	105.63	106.40
Dec 30, 1988	109.77	108.72	109.08	116.24	105.23	111.62	105.89	106.06	109.73	106.74	106.78
Jan 31, 1989	109.11	109.17	110.60	116.53	104.32	112.05	105.73	104.89	110.47	109.56	108.08
Feb 28, 1989	109.01	108.47	108.74	114.23	103.05	112.54	104.53	103.26	110.87	109.04	107.23
Mar 31, 1989	110.20	109.07	110.15	116.37	104.00	113.27	104.62	104.20	111.75	109.58	107.94
Apr 28, 1989	112.32	110.61	113.12	118.41	104.97	114.98	104.76	104.84	112.72	110.04	110.18
May 31, 1989	111.33	110.95	115.95	118.70	104.52	115.98	104.32	103.82	113.54	108.91	112.73
Jun 30, 1989	114.18	111.71	119.09	120.02	106.17	117.33	103.92	105.80	114.64	109.97	116.44
Jul 31, 1989	116.12	112.44	120.94	123.16	107.64	118.79	105.95	107.11	115.79	114.11	118.84
Aug 31, 1989	119.03	113.23	119.67	123.58	107.04	120.28	106.12	106.96	117.24	114.20	116.84
Sep 29, 1989	116.76	113.05	118.98	121.63	106.50	121.59	106.09	106.47	118.44	112.18	117.36
Oct 31, 1989	118.57	112.08	121.87	121.54	106.23	122.37	104.87	106.33	119.22	113.51	120.32

Historical total return indices — traded

Country indices in local currencies; December 31, 1987 =100.

	Australia	Belgium	Canada	France	Germany	Italy	Japan	Netherlands	Spain	United Kingdom	United States
Jan 6, 1989	109.99	108.81	108.70	116.52	104.81	111.65	105.60	105.85	109.84	106.53	106.47
Jan 13, 1989	109.80	108.88	109.67	117.33	104.88	111.90	105.87	105.53	109.98	107.15	107.54
Jan 20, 1989	109.92	108.98	110.27	116.99	104.99	112.01	105.67	105.44	110.10	108.90	107.70
Jan 27, 1989	110.53	109.19	110.78	116.98	104.76	112.07	105.93	105.40	110.43	109.92	108.29
Feb 3, 1989	108.39	109.21	110.61	116.29	104.20	112.30	105.43	104.64	110.23	110.29	108.13
Feb 10, 1989	107.85	109.27	110.01	115.94	104.24	112.38	105.56	104.44	110.76	110.47	107.41
Feb 17, 1989	106.49	109.04	109.81	114.66	103.72	112.47	105.40	103.97	110.67	110.45	107.58
Feb 24, 1989	108.05	108.52	108.52	113.76	102.93	112.58	105.05	103.23	110.83	109.21	106.92
Mar 3, 1989	109.18	108.64	108.96	114.56	103.73	112.90	104.12	103.72	110.90	109.80	107.47
Mar 10, 1989	109.39	108.79	108.99	115.01	103.82	111.83	104.31	104.11	111.19	110.10	107.37
Mar 17, 1989	109.57	108.82	108.64	115.29	104.26	112.40	104.23	104.30	111.15	109.77	106.83
Mar 24, 1989	109.81	108.82	108.95	115.90	103.96	112.96	104.47	104.21	111.41	110.03	107.24
Mar 31, 1989	110.20	109.07	110.15	116.37	104.00	113.27	104.62	104.20	111.75	109.58	107.94
Apr 7, 1989	110.10	109.56	110.31	117.02	104.46	113.50	104.55	104.72	112.06	108.78	108.31
Apr 14, 1989	110.34	109.75	111.32	117.50	104.48	114.11	104.65	104.77	112.35	108.93	108.98
Apr 21, 1989	112.02	110.19	112.39	117.75	104.92	114.74	104.73	105.13	112.58	108.68	109.34
Apr 28, 1989	112.32	110.61	113.12	118.41	104.97	114.98	104.76	104.84	112.72	110.04	110.18
May 5, 1989	112.39	110.77	114.24	118.70	104.84	115.09	104.77	104.68	112.91	110.04	110.64
May 12, 1989	112.62	110.82	115.24	118.49	104.49	115.33	104.67	104.13	113.19	110.43	111.51
May 19, 1989	111.93	111.12	115.29	118.69	104.21	115.32	104.72	103.71	113.47	110.35	111.96
May 26, 1989	110.86	111.04	115.63	118.81	104.40	115.80	104.63	103.74	113.69	110.08	112.45
Jun 2, 1989	111.57	111.06	116.91	119.30	104.74	116.05	104.36	104.01	113.69	108.59	113.76
Jun 9, 1989	112.30	111.51	118.55	119.56	105.50	116.79	104.51	104.96	113.72	108.83	115.37
Jun 16, 1989	112.42	111.57	117.60	120.22	106.20	117.33	103.80	105.76	113.91	108.81	114.50
Jun 23, 1989	113.18	111.54	117.99	120.25	106.22	117.54	103.99	105.78	114.45	108.72	114.74
Jun 30, 1989	114.18	111.71	119.09	120.02	106.17	117.33	103.92	105.80	114.64	109.97	116.44
Jul 7, 1989	114.57	111.86	118.91	120.74	106.62	117.64	104.74	106.22	114.78	110.85	117.09
Jul 14, 1989	115.16	112.09	119.35	121.39	107.21	117.89	105.01	106.67	114.95	112.29	117.26
Jul 21, 1989	115.17	112.27	119.19	121.91	107.23	118.27	105.32	106.65	115.38	112.54	117.13
Jul 28, 1989	116.09	112.42	120.02	122.62	107.43	118.61	105.79	106.97	116.09	113.96	118.52
Aug 4, 1989	117.70	112.71	120.42	123.29	107.77	119.38	105.93	107.39	116.27	113.52	117.65
Aug 11, 1989	118.33	112.94	120.28	123.95	107.69	119.80	106.04	107.42	116.48	114.33	117.17
Aug 18, 1989	118.31	113.06	119.84	123.09	107.28	120.03	106.14	107.28	116.80	114.75	117.07
Aug 25, 1989	118.17	113.19	119.79	123.47	107.22	120.03	106.19	107.02	117.06	114.57	116.92
Aug 31, 1989	119.03	113.23	119.67	123.58	107.04	120.28	106.12	106.96	117.24	114.20	116.84
Sep 1, 1989	119.12	113.25	120.01	123.51	106.98	120.39	106.19	106.91	117.35	113.91	117.40
Sep 8, 1989	118.98	113.21	120.12	123.63	107.05	120.64	105.42	106.93	117.62	113.45	117.79
Sep 15, 1989	118.56	113.33	120.08	122.76	106.72	120.87	105.22	106.72	118.00	113.43	118.33
Sep 22, 1989	117.18	113.36	119.67	122.89	107.06	121.18	105.46	106.93	118.24	113.66	117.68
Sep 29, 1989	116.76	113.05	118.98	121.63	106.50	121.59	106.09	106.47	118.44	112.18	117.36
Oct 6, 1989	116.76	112.70	120.75	121.99	106.65	121.70	105.57	106.25	118.61	112.78	119.07
Oct 13, 1989	117.25	112.32	121.87	121.28	105.91	121.90	105.00	106.03	118.81	111.93	119.55
Oct 20, 1989	117.40	112.46	121.44	122.05	106.65	122.08	105.49	106.30	119.31	113.13	119.74
Oct 27, 1989	118.16	112.26	121.77	121.97	106.71	122.16	105.00	106.47	119.37	113.13	120.07
Nov 3, 1989	119.01	112.15	121.86	121.06	106.17	122.53	104.66	105.91	119.35	112.66	120.28
Nov 10, 1989	119.78	112.04	121.21	121.86	105.79	122.49	104.33	105.77	119.27	113.51	120.80
Nov 17, 1989	120.68	111.98	122.12	121.24	104.81	122.52	104.57	105.49	119.46	113.26	120.99

Historical total return indices — traded

Country indices in dollars; December 31, 1987 =100.

	Australia	Belgium	Canada	France	Germany	Italy	Japan	Netherlands	Spain	United Kingdom	United States	Global	Non-United States
Dec 31, 1985	66.13	51.59	75.86	58.31	56.19		51.85	55.22		59.52	84.54	72.42	56.76
Jan 31, 1986	72.16	52.92	74.11	61.30	57.91		53.91	56.44		57.76	85.04	72.91	57.26
Feb 28, 1986	72.96	58.05	76.89	68.69	63.67		58.73	61.25		61.91	88.74	77.15	61.94
Mar 31, 1986	78.48	57.42	82.38	68.90	61.33		60.59	60.16		67.47	92.19	80.21	64.50
Apr 30, 1986	83.78	65.71	83.70	73.77	67.63		64.42	64.91		72.68	92.67	82.72	69.15
May 30, 1986	81.08	60.19	82.07	68.87	62.09		60.88	60.75		68.49	90.41	79.61	65.15
Jun 30, 1986	76.49	64.11	84.88	73.67	66.16		65.70	64.86		71.07	93.50	83.19	69.18
Jul 31, 1986	63.89	67.97	85.77	76.99	70.16		70.32	68.68		68.56	94.13	84.79	71.79
Aug 29, 1986	66.14	70.84	87.14	80.37	73.36		71.15	72.09		69.73	96.95	87.00	73.27
Sep 30, 1986	69.53	71.16	86.00	79.88	72.81		70.62	71.80		62.97	95.33	85.21	71.38
Oct 31, 1986	73.06	70.42	86.93	77.44	71.02		67.24	70.34		61.89	96.63	84.82	69.07
Nov 28, 1986	74.66	73.65	89.37	79.20	75.32		68.36	73.75		62.80	97.78	86.28	70.89
Dec 31, 1986	77.44	75.20	90.62	78.35	77.76		70.73	75.69		67.72	97.87	87.36	73.21
Jan 30, 1987	76.52	79.80	96.22	83.80	82.51		73.94	81.07		71.01	98.95	89.64	76.95
Feb 27, 1987	77.90	81.15	96.66	85.09	82.77		75.34	81.26		75.28	99.68	90.69	78.41
Mar 31, 1987	85.10	83.83	99.93	87.95	85.74		80.56	83.27		81.05	99.02	92.41	83.05
Apr 30, 1987	86.80	84.57	93.83	88.69	87.01		85.27	83.46		85.96	96.59	92.56	86.36
May 29, 1987	89.42	83.70	94.48	86.70	86.05		83.28	83.17		85.08	96.23	91.70	84.89
Jun 30, 1987	92.09	84.12	95.66	85.89	84.58		79.45	82.98		83.22	97.33	91.32	82.49
Jul 31, 1987	90.07	83.66	93.81	84.39	82.46		76.70	81.42		79.82	97.09	90.24	80.12
Aug 31, 1987	93.49	85.64	93.77	85.54	84.10		82.19	83.58		80.18	96.44	91.28	83.56
Sep 30, 1987	97.02	84.03	93.09	82.43	81.93		77.53	81.39		81.22	94.55	89.08	80.81
Oct 30, 1987	87.94	88.59	98.49	88.50	89.25		85.09	88.64		90.48	98.32	94.10	87.74
Nov 30, 1987	94.52	95.22	97.48	95.24	95.79		90.09	95.30		97.75	98.78	96.59	93.33
Dec 31, 1987	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Jan 29, 1988	100.88	95.70	106.48	98.39	94.05	94.21	95.71	94.88	96.18	95.22	103.23	100.62	96.33
Feb 29, 1988	103.27	96.90	108.73	98.80	95.27	94.51	95.80	95.51	97.97	96.86	104.29	101.55	97.04
Mar 31, 1988	109.41	98.46	110.19	99.51	97.36	96.79	99.77	98.09	101.84	104.93	103.26	102.39	100.60
Apr 29, 1988	114.28	97.89	109.93	99.91	95.34	95.77	99.92	96.86	101.44	104.01	102.67	101.92	100.30
May 31, 1988	117.71	94.52	110.71	99.61	92.04	93.84	98.62	93.93	100.73	102.29	101.89	100.83	98.78
Jun 30, 1988	119.76	90.71	114.09	95.72	88.09	90.25	91.88	88.55	94.84	93.85	104.13	100.00	93.54
Jul 29, 1988	121.48	87.34	113.83	92.96	84.47	88.33	92.36	85.28	94.33	94.54	103.47	99.26	92.67
Aug 31, 1988	122.89	86.74	110.05	91.89	85.16	88.39	88.92	85.74	94.47	92.05	103.61	98.57	90.81
Sep 30, 1988	119.60	88.69	114.86	94.46	87.09	89.47	92.15	87.73	93.64	94.71	105.90	101.04	93.46
Oct 31, 1988	126.36	95.00	116.96	100.26	93.16	95.45	100.56	93.36	99.26	100.99	107.65	105.10	100.40
Nov 30, 1988	134.29	97.51	119.08	103.25	95.46	100.06	105.18	95.88	103.94	103.62	106.40	106.06	104.03
Dec 30, 1988	129.84	96.23	118.89	102.22	93.36	98.97	102.63	93.69	103.91	102.47	106.78	105.43	102.09
Jan 31, 1989	134.43	91.23	121.44	97.12	87.22	94.95	98.24	87.39	102.41	101.79	108.08	104.46	98.15
Feb 28, 1989	120.72	93.25	117.85	97.91	88.71	97.21	99.71	88.60	104.13	100.87	107.23	104.31	98.86
Mar 31, 1989	125.08	90.23	119.98	96.78	86.06	94.50	95.38	86.03	101.87	97.93	107.94	103.45	96.00
Apr 28, 1989	123.57	92.22	123.97	99.10	87.62	96.83	95.45	87.29	103.82	98.57	110.18	105.16	97.05
May 31, 1989	115.97	88.26	124.99	94.18	82.98	93.94	88.71	82.34	96.80	90.83	112.73	104.14	91.44
Jun 30, 1989	119.48	89.97	129.38	96.29	85.35	96.26	87.54	84.91	99.11	90.53	116.44	106.52	92.16
Jul 31, 1989	122.26	94.65	133.16	103.85	90.71	102.92	93.73	89.98	106.37	100.71	118.84	110.80	98.55
Aug 31, 1989	125.91	90.76	132.13	99.13	85.46	99.14	88.56	85.25	102.73	94.97	116.84	107.58	93.84
Sep 29, 1989	125.63	94.52	131.34	101.81	89.21	103.15	92.21	88.90	106.84	96.12	117.36	109.32	96.94
Oct 31, 1989	128.58	95.61	134.92	103.65	90.68	105.14	89.02	90.48	109.76	95.10	120.32	110.74	96.47

Historical total return indices — traded

Country indices in dollars; December 31, 1987 =100.

	Australia	Belgium	Canada	France	Germany	Italy	Japan	Netherlands	Spain	United Kingdom	United States	Global	Non-United States
Jan 6, 1989	131.45	93.97	118.20	100.15	90.66	97.32	101.03	91.29	102.84	100.59	106.47	104.46	100.27
Jan 13, 1989	131.96	93.48	119.02	100.20	90.14	96.66	101.46	90.35	103.20	101.34	107.54	105.13	100.39
Jan 20, 1989	132.97	92.85	120.44	99.29	89.57	96.34	100.05	89.66	102.95	102.43	107.70	104.94	99.75
Jan 27, 1989	133.70	91.69	121.25	98.06	88.07	95.39	99.13	88.33	103.35	102.46	108.29	104.91	98.90
Feb 3, 1989	131.70	91.05	121.31	96.68	86.92	94.90	98.44	86.99	100.66	101.81	108.13	104.42	98.02
Feb 10, 1989	132.35	91.53	120.53	96.85	87.43	96.02	99.22	87.89	102.89	102.31	107.41	104.28	98.57
Feb 17, 1989	121.61	92.93	119.97	97.53	88.58	96.97	101.32	88.55	103.89	104.08	107.58	104.97	99.90
Feb 24, 1989	123.35	93.28	117.69	97.48	88.67	96.98	100.73	88.58	103.74	101.53	106.92	104.35	99.32
Mar 3, 1989	122.96	92.40	118.58	97.32	88.37	96.32	98.66	88.09	103.66	100.23	107.47	104.15	98.22
Mar 10, 1989	124.45	91.59	118.14	96.85	87.50	94.87	97.56	87.45	102.90	100.26	107.37	103.76	97.46
Mar 17, 1989	124.86	90.97	118.04	96.51	87.19	94.66	95.85	86.99	102.11	99.77	106.83	103.06	96.55
Mar 24, 1989	125.90	91.07	118.94	97.20	87.03	95.06	96.21	87.12	102.88	100.35	107.24	103.45	96.91
Mar 31, 1989	125.08	90.23	119.98	96.78	86.06	94.50	95.38	86.03	101.87	97.93	107.94	103.45	96.00
Apr 7, 1989	123.11	91.51	120.23	98.17	87.33	95.64	95.49	87.33	103.30	97.85	108.31	103.91	96.57
Apr 14, 1989	123.92	91.62	122.10	99.13	87.97	96.72	96.05	87.95	103.65	98.53	108.98	104.59	97.26
Apr 21, 1989	123.30	93.50	123.21	99.79	89.02	97.84	96.42	88.91	104.86	98.69	109.34	105.09	97.92
Apr 28, 1989	123.57	92.22	123.97	99.10	87.62	96.83	95.45	87.29	103.82	98.57	110.18	105.16	97.05
May 5, 1989	124.42	91.55	125.45	98.47	86.61	96.23	94.41	86.27	102.89	97.63	110.64	105.08	96.26
May 12, 1989	122.02	90.80	126.10	97.24	85.49	95.72	93.20	85.07	102.10	97.38	111.51	105.14	95.28
May 19, 1989	118.30	88.38	125.83	94.43	82.83	92.93	91.23	82.28	98.90	94.43	111.96	104.37	92.94
May 26, 1989	114.13	87.93	124.96	93.95	82.48	93.48	89.70	81.83	97.51	92.78	112.45	104.17	91.86
Jun 2, 1989	117.58	89.26	126.18	96.01	84.42	95.14	89.59	83.70	98.45	91.98	113.76	105.27	92.63
Jun 9, 1989	115.69	87.27	128.27	93.43	82.43	93.02	86.44	81.93	94.04	89.50	115.37	105.04	90.22
Jun 16, 1989	117.33	88.21	127.68	95.31	84.33	94.44	86.90	83.91	95.74	89.09	114.50	104.97	91.11
Jun 23, 1989	120.65	90.64	128.49	97.13	85.94	96.82	90.82	85.47	99.07	90.35	114.74	106.32	93.75
Jun 30, 1989	119.48	89.97	129.38	96.29	85.35	96.26	87.54	84.91	99.11	90.53	116.44	106.52	92.16
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Jul 14, 1989	120.23	92.37	130.15	99.66	88.08	98.61	90.41	87.46	103.36	95.76	117.26	108.36	95.16
Jul 21, 1989	119.45	92.52	130.39	100.18	88.19	99.50	89.78	87.49	103.32	96.70	117.13	108.27	95.10
Jul 28, 1989	120.35	93.50	131.73	102.20	89.46	101.25	91.80	88.85	105.52	99.68	118.52	109.89	96.97
Aug 4, 1989	124.29	93.36	132.84	101.97	89.05	101.46	91.92	88.54	104.74	97.05	117.65	109.34	96.75
Aug 11, 1989	124.40	91.59	132.96	100.36	86.89	99.50	90.24	86.50	102.94	95.90	117.17	108.34	95.14
Aug 18, 1989	124.24	91.03	132.26	99.08	85.96	99.07	89.99	85.86	102.56	95.25	117.07	108.03	94.57
Aug 25, 1989	124.13	91.06	132.72	99.42	85.84	99.39	89.50	85.54	102.70	95.37	116.92	107.87	94.40
Sep 1, 1989	125.30	90.16	131.99	98.49	84.87	98.37	88.22	84.67	101.99	94.07	117.40	107.66	93.33
Sep 8, 1989	126.11	89.63	131.23	97.99	84.33	97.97	86.86	84.11	102.23	92.64	117.79	107.43	92.39
Sep 15, 1989	127.25	89.69	131.61	97.57	84.39	98.14	86.38	84.19	101.61	93.22	118.33	107.67	92.26
Sep 22, 1989	127.18	91.44	131.70	99.21	86.20	100.07	87.62	85.90	104.11	94.94	117.68	107.99	93.71
Sep 29, 1989	125.63	94.52	131.34	101.81	89.21	103.15	92.21	88.90	106.84	96.12	117.36	109.32	96.94
Oct 6, 1989	126.70	93.56	133.47	101.90	88.48	101.90	89.52	87.76	106.11	95.86	119.07	109.63	95.55
Oct 13, 1989	124.92	94.22	134.93	100.55	87.89	101.84	88.85	87.73	105.88	92.97	119.55	109.61	94.92
Oct 20, 1989	125.35	94.78	134.44	102.89	90.13	103.64	89.71	89.50	108.21	95.28	119.74	110.36	96.33
Oct 27, 1989	127.46	96.17	134.72	104.48	91.54	105.23	89.82	91.04	109.32	94.85	120.07	110.86	97.02
Nov 3, 1989	128.56	95.29	135.09	102.89	90.28	104.93	88.58	89.79	109.92	93.87	120.28	110.49	95.97
Nov 10, 1989	130.44	94.21	135.82	102.64	89.08	104.53	88.15	88.83	109.06	94.89	120.80	110.60	95.61
Nov 17, 1989	130.80	95.33	135.70	103.00	89.32	104.88	89.24	89.62	108.72	94.34	120.99	110.68	95.56

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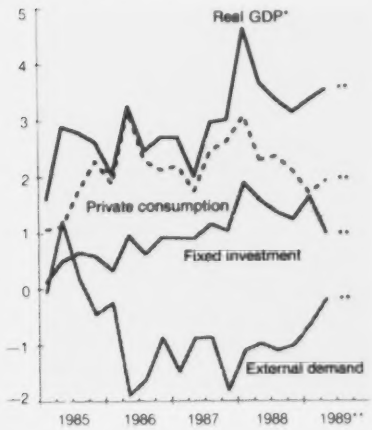
Chart 1

Europe's growth machine

year-on-year real GDP growth in the EC, percentage point contributions



*Year-on-year percent change
**Estimates for full year

The decade of Europe?

Western Europe enters the 1990s with a new-found confidence that would have seemed fanciful only a couple of years ago. Gone are the pessimism and talk of "Euro-sclerosis" bred by chronically rising joblessness. Instead, confidence has returned, employment expansion has resumed, and business investment has surged (see Chart 1). Some of the credit must go to the EC's 1992 "single market" project, which enlarges investment opportunities for productivity improvement, cost savings, and sales gains. At all events, Europe's real GNP grew 3.7% in 1988 and nearly as much in 1989. In 1990, the major economies on the Continent should again manage real GNP growth of 3% or more.

Most recently, the revolutions in Eastern Europe have added to the sense that the 1990s can be the decade of Europe. The East indeed holds trade and investment opportunities. But caution is in order here, for the difficulties of carrying through the necessary market-oriented reforms can hardly be overestimated. Even with well considered assistance from the West, success is not guaranteed, and will not come to pass quickly. Still, the Eastern countries now have a chance for progress and their potential must be rated a net plus for growth in Western Europe too.

The Eastern developments have their most tangible Western impact on Germany, where 1.5 million immigrants have arrived since 1987, with many more still coming. They promise a major addition to an otherwise relatively stagnant 30-million labor force. Given time, this will enhance the economy's supply potential. On the demand side, the immigrants already added significantly to Germany's domestic growth in 1989; the impact could be as much as a full percentage point in 1990, which will serve to keep the German economy strong.

Too strong, perhaps. The immigration adds to inflation pressures on a German economy whose consumption already was set to accelerate in 1990 in response to the New Year tax cuts, job gains, and the prospective step-up in wage growth. The booming economy and rigid labor markets are reviving union clout. To quell the pressures, and also to counter the mark's weakness against the dollar up until late

1989, the Bundesbank tightened monetary policy repeatedly, prompting most EMS partners to follow suit. Further tightening cannot be ruled out, in both Germany and Europe at large, given the uncertainties and lags involved in bringing inflation to heel. Investment likely will slow in consequence yet, in the major Continental economies, continue vigorous by recent cyclical standards.

Despite the Bundesbank's tightening, there are omens favoring EMS stability. In contrast to 1989, Germany's towering trade surplus should stabilize or shrink in volume terms this year, and no longer aggravate the deficits run by most of its EMS partners, since Germany's domestic demand growth should no longer fall short of its neighbors'. Besides, France's December interest rate hike, plus Italy's January lira devaluation and adoption of the narrow band, have done much to quell fervor for an early full-scale EMS realignment. Official determination probably will stave off one for quite some time to come, leaving German desires for a stronger currency dependent on further appreciation against the dollar or, more awkwardly, the yen.

Yet EMS realignments may not be a thing of the past, say, in the event of policy errors, or as Continental Europe moves to a slower growth track, or again if dollar weakness persists. And sterling's probable accession to the EMS exchange rate mechanism later this year could provide a pretext to adjust parities for whatever reasons. The choices made are sure to color the preparations already under way for next December's EC intergovernmental conference. This is to map the remaining stages of the Community's proposed monetary union. For a credible result, the conference will have to grapple convincingly and, no doubt, at length with touchy issues of national sovereignty, not to mention the complications newly raised by pressures for East/West German currency unification. Fair weather in the exchange markets will be a necessary, but by no means a sufficient, condition for a lasting and constructive European union.

Moving on from investment-led boom

Even before 1989's convulsions to the East, much of Western Europe was enjoying an economic boom. The business upswing, now over six years old, accelerated markedly in 1987. The acceleration has been remarkably general, albeit with some differences across Europe in strength, timing, and benefit to employment (see Table 1). Continental Europe currently shows most vigor: German real GNP rose 4% in 1989 and, in the first nine months of the year, both French and Italian output climbed about 3% from the year-earlier level. None of these major economies evinces any marked slowing; orders appear healthy, and both consumer and business confidence remain high. By contrast, the U.K. economy slowed rapidly in 1989 and, excluding oil production, may manage less than 1% growth in 1990. But this follows two years of fevered growth in 1987-88.

Business investment has spearheaded the EC economic boom. On average, nonresidential fixed investment in the four major economies rose about 10% annually in 1988-89 — well

Table 1

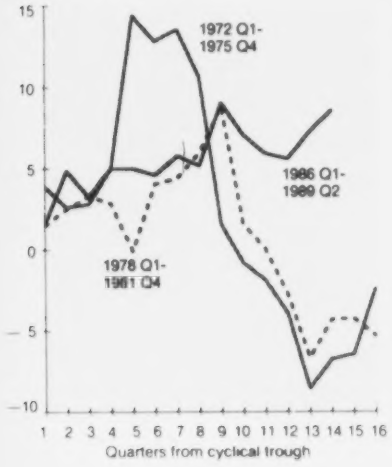
Real GNP

annual average percent change

	1979-1987	1988	1989	1990
Europe	2.1	3.7	3.4	2.7
Germany	1.7	3.6	4.0	3.3
France	1.9	3.4	3.6	3.1
Italy	2.5	3.9	3.4	3.0
United Kingdom	2.2	4.3	2.4	1.1
Excluding oil		5.0	3.5	0.6
Denmark	2.2	—0.4	1.4	1.3
Spain	2.4	5.0	4.9	4.1
Japan	4.5	5.7	5.0	4.5
United States	2.7	4.4	2.9	1.5

Chart 2

Investment booms compared



above the gains earlier in this recovery and not only higher but also longer lasting than those in any sustained period since the late 1960s (see Chart 2).* This new-found resilience is partly the product of structural improvements.

First, the business community has gained confidence in the policy environment. Most European governments have a core of medium-term objectives that are understood by business, if not always popular. For much of Europe, the EMS confers policy stability. Most governments further have cut, or are in the process of cutting, business taxes, with major economies converging toward a tax rate of around 35% on distributed profits.

Second, the 1992 single-market project has spurred investment, from both inside and outside the Community. Some goes for rationalization and cost saving, the better to withstand competition as national barriers come down. Some firms invest to build sales and market share across the Community. In addition, not a few non-European firms deem investment warranted now to avert possible exclusion from the future single market. The projected accord with EFTA, and a conceivable extension one day to Eastern Europe in some form, compound investment interest.

Third, profitability improved secularly in most of Europe throughout the 1980s. All four major economies saw faster profit growth, higher real rates of return, and also a shift in income distribution toward profits. In most cases, this reversed the 1970s' profits plunge. Profits got a notable boost from the 1986 slump in oil and other primary commodity prices. This "reverse" oil shock naturally went on to spark investment.

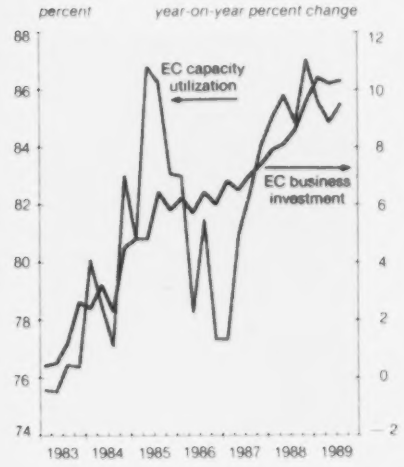
Nonetheless, the gains in both profits and investments have cyclical origins too: the sheer depth of the last recession, and the sluggish output recovery through the mid-1980s, left excess capacity in most industries far into the upswing; only in the last two years have capacity shortages seriously constrained output, in turn spurring investment in capacity additions (see Chart 3).

Cyclical forces now make investment less urgent for capacity expansion. Monetary tightening not only has raised the cost of borrowing but also, by strengthening most European currencies against the dollar and yen, has rendered manufacturing investment less attractive. Surveys suggest that business investment will slow somewhat this year in Germany, France, and Italy, and it promises to stagnate in Britain. Still, for Europe at large, the slowdown should be less pronounced than in the mid-1970s and early 1980s, not least because the structural positives are by no means exhausted and business finances generally are stronger than before.

With investment waning as the main prop for Europe's domestic demand growth, the key question is whether consumption will take up the running, based on gains in jobs and disposable income and on stable or falling household saving. In 1989 consumption grew 3.2% on average, but dropped nearly 2% in austerity-wracked Norway and soared 5.5% in self-confident Spain. The cast of consumption leaders and laggers has been shifting. Pre-

Chart 3

Investment and capacity

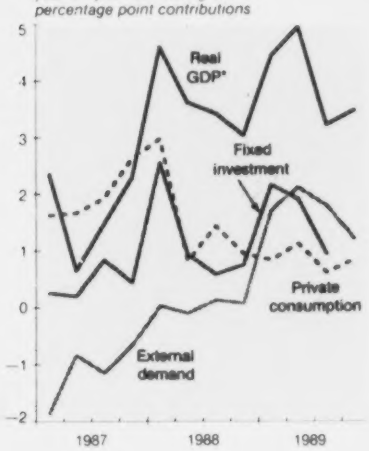


*In 1972-73, investment surged more strongly than in recent years, but soon succumbed to the first oil shock. In 1978-79, investment picked up less steadily than in the current cycle, and petered out earlier.

Chart 4

German growth

year-on-year real GDP growth, percentage point contributions



*Year-on-year percent change

viously, in 1988, consumption in Britain had surged 6.9%.* High real interest rates eventually put an end to this surge in early 1989. Real rates have risen elsewhere too. Consumption growth now may slow quite markedly in Spain, mildly in Italy, but largely hold its own in France on the basis of modest employment growth, limited personal tax reductions, and real income gains from falling inflation.

The main hope for sustained consumption growth in Europe as a whole lies in its prospective speedup in Germany. Consumption virtually stalled there in the first half of 1989 (see Chart 4), when spending by established residents was notably weak. But the new immigrants probably raised overall consumption by as much as 0.5% of GNP in the full year, even with their spending initially low. It can be expected to pick up as they gain jobs and credit; indeed, their peak impact likely will come in the first half of 1990 — just when tax cuts and higher wage growth boost spending otherwise. Altogether, Germany's consumption growth could reach or exceed 3.5% this year — more than double the meager 1.6% of 1989 — and boost its imports correspondingly.

If these expectations are met this year, not only will consumption largely substitute for investment as the mainstay of Europe's domestic demand growth but also its concentration in Germany will begin to correct trade imbalances that, at present, lopsidedly favor Germany. Net export gains provided nearly half Germany's real GNP growth last year and raised its overall trade surplus both absolutely and relative to its gross trade and GNP. Germany's bilateral trade surpluses have risen most with countries, such as Britain and Spain, where cumulative domestic demand growth has been greatest in recent years (see Table 2 and Chart 5). These countries now are curbing domestic demand. And, with economic growth already sluggish in North America, and expected to slow elsewhere as monetary tightening takes hold, worldwide investment growth is projected to weaken. This will trim growth in Germany's capital goods exports.

Indeed, Europe faces declining real net exports more generally. This subtraction from output, which could be on the order of 0.2%, will continue the trend since the dollar peaked in 1985 (see Chart 6). Erosion of demand from North America — Europe's main trading partner — and of competitiveness vis-à-vis Japan will be compounded by the recent appreciation of most European currencies against the dollar and the yen, in the case of the mark by 15% since September. At least in the short run, any pickup in exports to the Eastern economies can hardly make up trade losses elsewhere in the world.

For Europe as a whole therefore, real GNP growth must be expected to slip a little this year — but from a gallop to a canter, not the crawl that was the best it managed in the 1980s until the last years of the decade. That crawl was the price paid for the adjustment policies followed by most European economies after

Table 2

Germany's bilateral trade balances

billions of dollars at annual rates, not seasonally adjusted

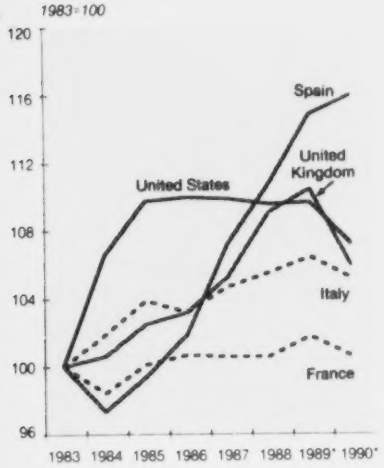
	1988	1989 Jan-Nov
Total	72.9	71.9
Western Europe	66.6	71.5
France	10.4	13.0
Italy	6.5	8.0
United Kingdom	12.8	13.3
Belgium	6.2	5.8
Denmark	1.7	1.7
Netherlands	2.1	1.6
Spain	4.8	6.1
*Eastern Europe**	—7.2	—7.9
Soviet Union	1.5	1.5
OPEC	2.6	2.0
Japan	9.5	4.3
United States	—8.7	—8.9

*Excluding East Germany.

*U.K. personal saving plunged from 8% of disposable income in 1986 to a recent level below 4%; some of this decline may reverse in response to tighter money, but part stems from liberalized access to credit, especially based on housing collateral. Scandinavia exhibits something of the same phenomenon, which in future may appear elsewhere in Europe as credit becomes more accessible.

Chart 5

Domestic demand relative to Germany's



*Estimated or projected

the second oil-price shock. Now comes the test of their efficacy in lifting Europe's longer-run potential growth.

Inflation and the labor markets

Judged by official and market comment, inflation expectations have risen in Europe over the past year. Most countries reported a distinct rise in inflation during 1989. Much of the rise came from tax or interest rate actions that should ultimately restrain inflation or reflected temporarily higher energy and food prices.* Indeed, core inflation has risen little in the major European economies (see Chart 7). Still, long-term bond yields have moved sharply higher recently, suggesting market worries that, even after the current growth surge crests, the level of aggregate demand will stay too high. This could allow further increases in profit margins and, with unemployment falling in most European countries (see Chart 8), ultimately undermine wage discipline.

So far wage increases have picked up rather little — even in Britain, where inflation has surged and unemployment has fallen the most. Maybe the deep recession of the early 1980s, and the scale of the rise in unemployment through the decade, permanently reshaped European labor behavior: trade union influence declined in most countries as the more highly unionized industries suffered disproportionate job losses; and wage negotiations took on new realism, both unions and employers realizing that governments would no longer validate undue wage growth.

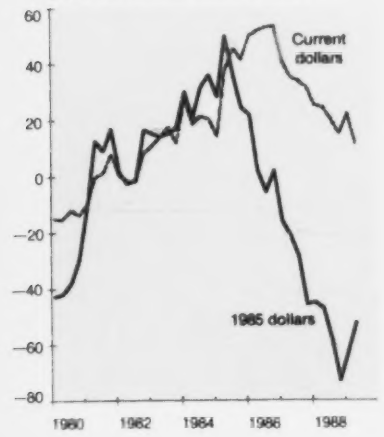
A more skeptical view would attribute wage sluggishness in Europe in part to settlement lags; annual or biannual contracts channel any unexpected spurt in income mainly to profits at first, and only later to wages. In addition, the notorious rigidities of European labor markets live on. These are manifest in persistently large disparities in regional unemployment. For example, whereas among the ten largest U.S. states the unemployment rate ranges from 2.8% to 7.2%, the range in Britain runs from about 3.5% in the Southeast to 9% or so in Scotland; in Germany it runs from about 4% in Bavaria to 12%-14% in some Northern city-states; and, in Italy, 6% unemployment in the North coexists with 21% in the South. Yet these disparities in Europe have little impact on wage behavior. In Germany, for example, wage increases in 1982-87 were in a narrow 3%-4% range; some areas with above-average joblessness even saw above-average wage gains.

Moreover, wage-setting practices in Europe remained largely intact during the 1980s. The shift of income to profits — central though this is to Europe's long-

Chart 6

EC trade balance

goods and services, billions of dollars



*Indirect tax changes added around ¾ of a percentage point to Germany's 1989 inflation. They added too to inflation in Italy, but subtracted in France, the Netherlands, and Britain. Measured U.K. inflation, however, was boosted some two percentage points by the relentless rise in mortgage interest rates.

Energy prices jumped in early 1989 thanks to strong worldwide demand and accidents to production and shipping. Food prices have accelerated sharply in Europe over the past year, due not only to adverse weather but also to beef and dairy production cuts undertaken to reduce Common Agricultural Policy costs and strengthen the overall EC budget. Future price increases in Europe for energy and food should be more moderate, given more normal weather, the expected recovery of production, the recent decline of the dollar, and its likely continued weakness. Still, the higher *level* of energy and food prices has cut into household purchasing power and leaves pressure for catch-up wage increases.

Chart 7

Core inflation

consumer prices excluding food and energy, year-on-year percent change

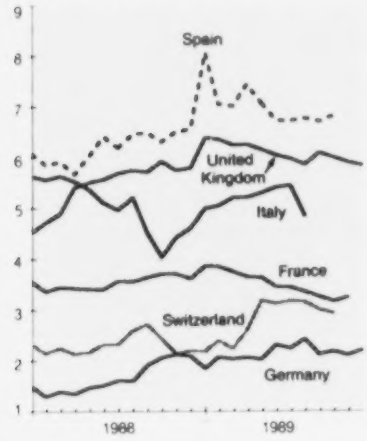
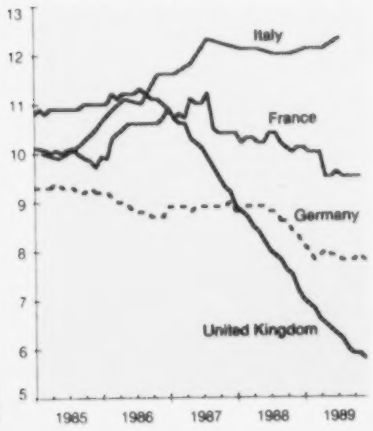


Chart 8

Unemployment

percent of labor force



term economic health — has not been accepted by unions as permanent. Rather they see it as reason for wages to "catch up." Especially in manufacturing, wages still are determined at the industry level, with an implicit target for real increases and recent and prospective inflation then determining nominal increases. The key settlements establish a "going rate" to which other established employees aspire, with scant regard for the interests of the unemployed. In Germany, the negotiations between the engineering employers' federation and the I. G. Metall union are the lead focus for wages in the 1990 pay round. In Britain and France, autoworkers set the pace.

The U.K. government stands out for its zeal over the past decade to free up labor markets, principally through reforms of trade union law. The reforms probably have contributed to the substantial step-up in U.K. productivity growth in manufacturing. But, in part because of the labor immobility due to housing-market rigidities and the neglect of competition as a privatization priority, Britain's reforms have yet to deliver wage discipline.

In Continental Europe, much less has been done to strengthen labor market competition. Even apart from agriculture, subsidies often remain a way of life in those economies, protecting those currently employed. And privatization rarely is espoused as a means to tackle recognized public-sector inefficiencies.

Yet there are grounds for optimism. France and Italy have partly liberalized labor dismissal procedures. And Germany is more permissive of temporary employment. These steps in principle should benefit hiring and flexibility. More important, all across Europe the oncoming single market is increasing pressure for more flexible labor practices. Though the potential payoff is high, progress is slow in the teeth of interest group resistance. Muting that resistance may be the main economic value of the proposed EC Social Charter. This would permit Community directives and legislation on many aspects of working conditions, but without necessarily forcing minimum standards on member states. The Charter was endorsed at the Strasbourg Summit last December by all save Britain, which views it as interventionist and destructive of jobs. The Charter may indeed be at variance with free-market purism, but need not license market paralysis.

In addition, in the key case of Germany, there is the new factor of large-scale immigration. For the moment the influx is putting price pressure on housing and other nontraded goods and services, whose domestic supply cannot be supplemented by imports nor quickly expanded; in the case of housing, the pressure could intensify even as residential completions double between 1988 and 1990. But the newcomers' prospective labor-force participation is high since most are younger than established workers and many from East Germany are single. Moreover, the immigrants typically are more mobile and skilled than the existing unemployed. In due course, they will relieve regional and skill mismatches between labor supply and demand. And, across the board, they should bring greater competition to Germany's labor markets — both on and off the books. Their absorption even may prompt innovation in pay arrangements by means of bo-

Table 3

Consumer prices

December-December percent change

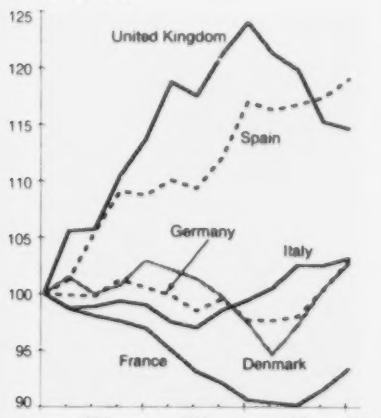
	1988	1989	1990
Europe			
Germany	1.8	3.0	3.0
France	3.1	3.6	3.1
Italy	5.4	6.5	6.0
United Kingdom	6.8	7.7	5.5
Denmark	4.6	4.8	4.0
Spain	6.0	6.9	6.0
Japan	1.3	3.0	2.3
United States	4.4	4.6	4.8

Chart 9

Currency competitiveness

unit labor costs in manufacturing relative to trade partners

1987 Q1=100



*Latest plots, for 1989 Q4 and 1990 (first two weeks), apply changes in the J.P. Morgan real effective exchange rates to the IMF's estimates of 1989 Q3 relative unit labor costs.

nuses or two-tier schemes.

But all this will take time. Although East German immigrants enter the labor market relatively quickly and are snapped up by eager employers, Ethnic Germans from elsewhere in the East often spend about a year on language and training courses. In the short run, the rise in German inflation expectations, bred in part by the immigrant influx, seems to be stoking up organized labor's wage and working-hours demands. Employers may be eager to compromise for now, in the hope of averting strikes this spring when their sales are expected to be most vigorous. Still, they will be reluctant to commit themselves beyond one year, by which time labor force expansion may well relieve current shortages.

All told, Germany's inflation likely will rise only slightly further in 1990 — with the effects of fast domestic demand and wage growth outweighing a dip once the 1989 tax hikes drop out of the twelve-month inflation measure — before receding as labor markets ease. Significantly, France's inflation could work into line with the German rate (see Table 3), completing a decade-long process of convergence. Inflation containment looks more problematic in Italy, Switzerland, and much of Scandinavia. But the trend should be downward in economies whose activity is slowing, particularly in Britain where declines in core inflation and mortgage rates could bring down "headline" inflation to about 5.5% by year-end.

The EMS: converging on stability

The parities of EMS currencies participating in the exchange rate mechanism (ERM) have not been realigned since January 1987, aside from the recent adjustment bringing the lira into the narrow 2.25% band.* Governmental resolve and near-term economic prospects now give a good chance that 1990 will see no realignment of the core French, Belgian, and Dutch currency parities with the mark. There is a good chance too that sterling will enter the ERM. This could occasion minor adjustments of several currencies, as could the progressive ending of exchange controls. Nor does the core group's present stability preclude realignment later. Most likely, this would be more limited in scope and scale than in the early years of the EMS. Thus the EMS currencies show a process of convergence on stability, but have yet to reach that promised land.

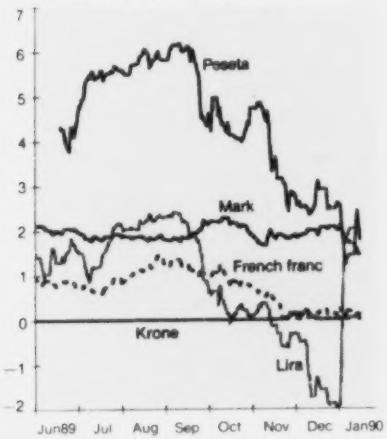
Crucial to the prevailing EMS stability are France's gains on balance in price and cost competitiveness (see Chart 9). The credit goes mainly to wage containment, which was dramatically reaffirmed in last October's pacesetting Peugeot settlement. Moreover, France's manufactures exports have lost only a little ground in foreign markets in the last year or two and its current account deficit has widened little. Besides, because the fundamentals bode fairly well for German trade adjustment this year, important relief is in sight for the trade positions of France and other European countries managing their domestic demand

*The adjustment left the lira's lower fluctuation limits unchanged, but lowered the ceilings. The authorities earlier allowed the lira to drift down toward the lower limit, thereby exploiting the wide 6% band to the full, before locking in to the new narrow band.

Chart 10

EMS tension

*percent change in market spot rates from central rates versus Danish krone**



*The krone is used as the reference currency because during the period it has usually been the weakest currency in the ERM

growth with prudence.

The EMS has evolved since the days when trade and competitiveness imbalances forced realignments because private capital was less mobile than today. The gains against inflation made by France, Denmark, and Ireland — and not made by Britain — show how governments can exploit the EMS as an effective surrogate incomes policy; it offers counterinflationary credibility, as well as deflationary threat, that purely domestic commitments lack. These countries' investment in credibility, purchased dearly over a sustained period, could be lost immediately were they to devalue; hence, their willingness to raise short-term interest rates when their currencies come under pressure within the ERM narrow band (see Chart 10). In particular, France opted in December for a 50-basis-point unilateral rise in official rates; and its economy probably could cope with yet another rise if need be. Indeed, since all the main Continental economies are likely to expand briskly for some time to come, they seem unlikely to devalue but rather will keep their interest rates in step as necessary with Germany's, if at some cost to economic growth.

Yet Germany's self-interest may be at odds with EMS stability. For much of 1989, the mark sagged and stayed weak against the dollar in the face of rising German interest rates. Frustrated on this score, yet eager for a stronger mark, Bundesbank officials openly made known their desire for mark revaluation against the other EMS currencies. The case for a stronger mark looked compelling: by encouraging imports to ease domestic bottlenecks, discouraging foreign demands for German exports that are taxing domestic production capacity, and deterring excessive investment for tradable goods production that may find no market once intra-European adjustment occurs, it would work to trim the German trade surplus; more important, it would help rein back domestic inflation, restoring Bundesbank credit among critics who judge it too willing to sacrifice discipline at home for European objectives.

Even so, Germany cannot engineer EMS realignment without its partners' consent. Instead, the most conspicuous result of Bundesbank tightening so far has been a near-15% climb in the mark/dollar rate since mid-September, helped by Federal Reserve easing, the consequent crossover of short-term German and U.S. interest rates, and the "Europhoria" now sweeping many global investors. The mark/yen rate likewise has climbed dramatically. In addition, within Europe, but outside the ERM, the U.K. authorities have accepted a 10% drop in the sterling/mark rate since October rather than hike interest rates yet again.

The upshot has been that by mid-January 1990 the mark had risen 5% from its low of last September in broad real effective terms against the major currencies worldwide, and was back close to its level at the time of the Louvre Accord nearly three years ago. Thus, the German authorities have achieved a stronger currency. But it has taken a policy mix of higher interest rates and a lower mark exchange rate in the ERM than they prefer even now in light of Germany's huge trade surpluses within Europe, the competitive disadvantage German producers now face vis-à-vis U.S. and Japa-

Table 4

Current account balances

billions of dollars

	1988	1989	1990
Europe			
Germany	49	53	50
France	—4	—4	—5
Italy	—5	—7	—11
United Kingdom	—26	—33	—28
Denmark	—2	—2	—2
Spain	—4	—10	—15
Japan	80	57	60
United States	—127	—112	—105

nese rivals, and the disruption of the world's key currency relationships.

Continued EMS stability relies on several assumptions: for example, that the removal of exchange controls turns out a nonevent; that German interest rates have little further to rise to tame inflation pressures; that progress is made, or thought imminent, in intra-European trade adjustment; and that domestic demand in the ERM economies holds up well enough that the output and employment costs of external imbalances remain politically supportable for the sake of price and wage discipline.

Any of these assumptions could be belied by events. The greatest risk may be that wage push and general overheating, perhaps aggravated by "opportunities" in Eastern Europe, could dictate substantially higher German interest rates. Inadequate trade and current account adjustment also could prove a problem (see Table 4). Granted, up to a point, the widening of trade imbalances may be judged analytically to have been a harmless, and even virtuous, by-product of Europe's economic integration. This process is opening cross-border investment opportunities and is boosting gross trade flows, particularly in automobile components and other semimanufactures, as production stages disperse across countries. Nonetheless, the imbalances also reflect divergent demand policies and performance.

Moreover, several of Germany's EMS partners have lost price and cost competitiveness in recent years. The position may be evaluated in a number of ways, for example, by relative wholesale prices of manufactures, as gauged by the J.P. Morgan real effective exchange rate indices, or by relative unit labor costs in manufacturing, as estimated by the IMF. Since the January 1987 EMS realignment, the big loser on both bases has been Spain, due to inflation and peseta strength. Britain lost heavily through early 1989, but has made up much ground by sterling's decline against the EMS currencies. Italy and Denmark have held broadly steady in labor cost terms for the period as a whole, but each has been hit by the dollar's recent fall.

The combination of trade imbalances and competitiveness trends turns up several candidates for eventual devaluation: the peseta, despite Spain's still recent linking to the EMS; the lira, given Italy's inflation problem; the krone, recalling Denmark's major loss of competitiveness over the 1982-86 period; and, were Britain an ERM participant, sterling, to make up for the United Kingdom's demand excesses in 1987-88 and continuing high wage inflation.

The slowing of U.K. domestic demand in 1989 already has convinced the British to let sterling depreciate. And, were the Danish government more confident of sustaining wage discipline, a downward move for the krone would make sense, given that Denmark has had no net economic growth since 1986 and now faces short-term interest rates of 14% and more, a full ten points above inflation. Devaluation, however, makes little sense for economies facing high demand pressure, as do Spain and Italy at present. Nonetheless, their calculations could change once fast domestic demand growth gives way to more moderate expansion. Indeed, if Europe's growth slows more se-

verely than expected — undercut by a weak dollar or, even more, in the event of U.S. recession — commitments to existing EMS parities are sure to be rethought.

Can EMU fly?

The risks just outlined may come to haunt an otherwise fairly benign environment for this July's launching of the three-stage progression toward European monetary union (EMU) envisaged in the April 1989 Delors Report. The first stage commits EC members to closer policy coordination and performance convergence; to the phasing-out of exchange controls still operated by Spain and some of the smaller states; and to the participation of all members — most significantly, Britain — in the EMS exchange rate mechanism, albeit with no target date agreed. All this ventures little beyond present practice and professed intent.

The same cannot be said of the later stages of EMU, which cannot help but encroach on national prerogatives in monetary policy. At the Strasbourg Summit the EC leaders agreed to convene an intergovernmental conference next December to lay plans for those later stages. If no general EMS realignment occurs this year — effectively for the fourth year in a row — and exchange market conditions also appear benign at the time, some conference participants could argue that the time was at hand, or at least was fast approaching, to eliminate existing fluctuation bands and declare an "irrevocable" fixing of exchange rates among the national currencies.*

Yet such a fair-weather EMU likely would not long endure, even if prefaced by one more, and supposedly final, parity realignment. A workable EMU must resolve major issues of institutional structure and control — issues inescapably dominated by political and national sovereignty concerns as well as economic objectives. In the Delors Report view, the monetary union would be managed by a European central banking system, perhaps structured somewhat on the U.S. Federal Reserve model; and the monetary structure would be complemented by binding rules on national fiscal policies to assure an appropriate overall fiscal stance for the Community.

The Delors Committee view is not universally shared. Certainly, the necessity for centrally prescribed fiscal rules appears questionable, inasmuch as market discipline over member states seems potent in other monetary unions such as Australia, Canada, and the United States; of course, in these cases the federal government's economic weight is much larger

*If truly irrevocable, this would accomplish a kind of EMU, but with most of the costs and few of the benefits of a full-scale currency union. To make the fixed rates credible, national monetary policies would have to be so strictly coordinated as to lose all serious vestige of independence. Yet currency conversion costs would not disappear, even though no longer containing an exchange risk premium. Unless interchangeable at one-to-one parities, the various national currencies would find only limited day-to-day use as media of exchange outside their countries of issue. And, even at par, the Luxembourg franc does not circulate freely throughout Belgium. Nor do Scottish clearing banks' notes in England, unlike bills issued by the twelve Federal Reserve banks within the United States. Of course, conversion costs would vanish were one currency to emerge preeminent across Europe, as the dollar may come to do in Latin America. The mark would be a candidate for preeminence in Europe on store-of-value grounds. Instead, political considerations leave only one viable choice, albeit a risky and visionary one: a European common currency, possibly owing parentage to the ECU, with a single bank of issue that effectively supersedes national central banks.

relative to that of the states than in the EC.

More crucial for the EC than the fiscal issue is the mandate of the proposed central bank. The Bundesbank is adamant that its own priority for price stability and substantial independence of political control be replicated in the Community institution. EC governments subscribe to price stability rhetorically, but often backslide in practice unless external pressures compel discipline. To surrender control of monetary policy to appointed central bankers goes against the grain of politicians; besides, it raises questions of democratic accountability. The central bankers are pressing their aims through their European committee, which recently elected the Bundesbank president as its leader — for the first time to a three-year term. For their part, governments prefer that the issues be tackled in the European Monetary Committee, in which Treasury voices carry weight.

Further complicating matters, Britain has advanced a vision of limited union emphasizing competition among national monetary policies within a fully fixed-rate EMS carrying minimal institutional superstructure. This approach reflects U.K. distaste for loss of sovereignty, especially to "bureaucrats in Brussels" — no matter the checkered history of its own monetary management and the probability that its approach would entrench the supremacy of the Bundesbank across Europe. Though the U.K. approach falls far short of the Delors Report vision, and is widely seen as a recipe for delay, it has the merit of simplicity and acknowledges that market forces are a power to be reckoned with. But to carry weight at the forthcoming conference, Britain first will have to sign into the ERM. The gravity of the issue means that Britain likely will do so in the second half of this year, assuming U.K. inflation declines as expected.

Clearly, even with all parties constructively engaged, the intergovernmental conference may prove a lengthy affair. Thus the completion of EMU may lie many years in the future. Enthusiasts naturally wish a quick decision. Many will argue that developments to the East heighten the urgency of EC union — in both its single market and monetary dimensions. Perhaps so. But if EMU is to endure, it cannot rely on good luck or goodwill to paper over differences; it also must provide mechanisms to reconcile interests and distribute benefits such that all national governments find their sacrifice of monetary independence worthwhile.

Table 5

Income and population, 1988

	Nominal GNP* dollars billion	Population millions	GNP per capita,* dollars
Bulgaria	50	9	5,600
Czechoslovakia	110	15	7,600
East Germany	150	16	9,400
Hungary	70	11	6,500
Poland	210	38	5,500
Romania	95	23	4,100
Greece	70	10	6,800
Portugal	65	10	6,400
Spain	370	39	9,400
Italy	750	57	13,000
West Germany	870	61	14,200
United States	4800	246	19,600

*The GNP figures, necessarily crude, are expressed in dollars at estimated "purchasing power parities." Referenced to U.S. goods and services prices, these attempt to avoid the distortion of real income comparisons inherent in conventional market exchange rate conversions.

Table 6

Eastern Europe's external trade, 1989

billions of dollars

	Exports	Imports
Hard-currency total	41.7	36.3
Bulgaria	2.5	2.9
Czechoslovakia	5.4	5.7
East Germany	9.8	9.8
Hungary	6.0	5.4
Poland	9.1	7.8
Romania	8.9	4.7
Hard-currency total 1988 % of all trade*	31.6	31.0
1989 Jan-Jun % of external trade of		
Western Europe	1.4	1.4
Germany**	3.4	3.0
Japan	0.4	0.2
United States	0.1	0.3

*The bulk of Eastern Europe's trade occurs within COMECON, including the Soviet Union, at accounting prices and exchange rates not set by world markets.
**Including trade with East Germany.

*Eastern Europe: a cautionary note**

The downfall of the old-line Communist rulers of Eastern Europe is triggering seemingly irreversible, yet dizzying, ongoing change in the region. Assuming the Soviet Union continues to pull back, potentially significant opportunities are opening up for Western firms and investors. Wisely developed, the Eastern economies could multiply their living standards, provide large-scale outlets for Western firms, and function as handy, low-cost production sources for the West European market. Nonetheless, a sober view is warranted of both the near-term payoff and the long-term chances for success. The road ahead is ridden with potholes, even in the case of East Germany whose integration with the West may be less a matter of economics than of politics.

Due caution begins with the recognition that the Eastern countries, excluding the Soviet Union, are of modest immediate economic significance to the West, even to West Germany. Though their collective population of about 110 million is roughly one-third that of today's European Community, their GNP — of which all estimates are necessarily shaky — may be only about one-seventh the EC's, or less than that of Italy alone (see Table 5). Their per capita incomes range much below Portugal's, in the case of Romania, to somewhere about Spain's, in the case of East Germany. Of course, their economies show none of the dynamism of the Iberian peninsula and some continue to lose skilled labor on a major scale to emigration; 1989's flight of nearly 350,000 from East Germany may slash output up to 5% this year.

Moreover, the Eastern economies have limited potential as export markets for the West. In 1989 their combined hard-currency purchases came to just $36 billion (see Table 6), with up to 70% of their external trade instead conducted among themselves or with the Soviet Union. The existing COMECON trade regime now stands at death's door. A workable successor will have to substitute world market prices for the former fictions and provide for hard-currency settlement of trade imbalances beyond whatever credit limits, if any, may be agreed. Though COMECON members then will switch trade to hard-currency markets whenever advantageous, politics, technical impediments, and other adjustment costs will make the switch a long drawn-out process.

Suppose, at the extreme, that the Eastern economies raise the proportion of their imports from hard-currency sources to 70% five years hence and are somehow able to finance 10% annual growth in their imports overall. In five years' time, their hard-currency imports would run about $130 billion at today's prices. This would be no mean sum and might add two-to-three percentage points to West Germany's annual export growth. Yet, in absolute volume, the total exports of the four major Western European economies rose not much less just last year alone. Plainly, the markets of the West will remain the overwhelming arbiters of the export potential of most

*Many of the statistics on Eastern Europe cited in this article and the accompanying chart and tables are drawn from *PlanEcon Review and Outlook*, PlanEcon Inc., Fall 1989.

Table 7

External financial indicators

hard-currency denominated, billions of dollars

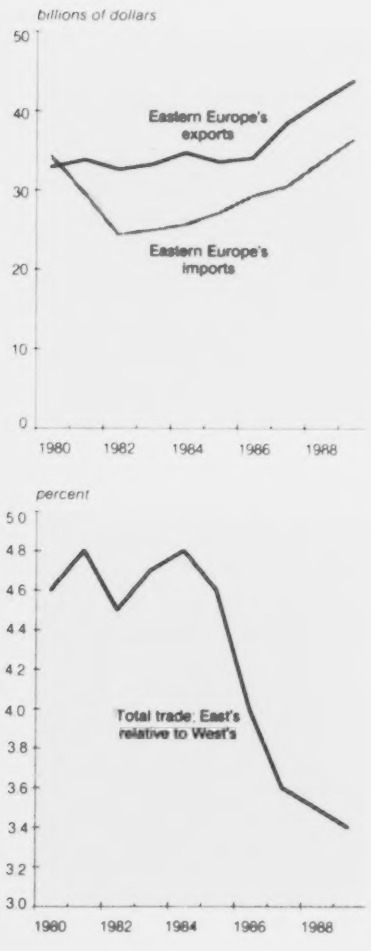
	Current account 1989	*Assets* end-1988*	*Debt, end-1988*	
			Total	*Percent of 1989 goods exports*
Bulgaria	—0.5	1.8	7.8	210
Czechoslovakia	0.0	1.7	5.5	100
East Germany	0.5	13.2	20.7	210
Hungary	—1.5	3.5	20.0	330
Poland	—1.8	3.7	39.2	430
Romania	2.0	0.8	1.9	20

*Deposits in BIS-reporting Western banks plus other assets of uncertain marketability.

Chart 11

Europe's trade: East and West

hard-currency denominated



Western firms, even if some do well in the East.

Most of all is caution warranted concerning the investment potential of the East European economies. Take the case of East Germany. Providing its 16 million population with a capital stock akin to the Federal Republic's would take cumulative investment in plant, equipment, and infrastructure of up to $300 billion from some mix of internal and external sources. Western capital goods and construction firms drool at the prospect. But, if the creditworthiness of almost all Eastern economies is in serious question, who will pick up the financing tab and with what chances of success? What must the recipient economies do to develop market systems that will allocate resources productively, and how best can they be helped to do so?

Without backup from the West, the Eastern economies are not yet prudently bankable on commercial terms, and certainly not for general-purpose balance of payments funding. None, except perhaps East Germany, has substantial reserves (see Table 7). Worse, after nearly a decade's workout, Poland's hard-currency foreign debt stands as high as ever relative to exports; Hungary has had considerable trouble procuring financing; and East Germany has coped only with the help of the Federal Republic.

Moreover, export expansion by the Eastern economies in the 1980s met only limited success (see Chart 11), was hugely costly to living standards and investment, and did little to relieve the dearth of hard currency for imports to support development — much as in many debt-loaded Latin American economies. The Eastern economies now can try to divert exports from COMECON partners to Western markets. However, many of the products concerned are not presently of a quality salable in Western markets and bringing them up to par may well take years to accomplish. In the meantime, the overall exports and growth of the Eastern economies will be severely limited by domestic needs and supply constraints. At the same time, especially for the heavy borrowers of the past, debt service will be competing with imports for scarce foreign exchange.

The casting-off of Communist Party rule therefore does not unlock doors to large-scale new money for the East in the form of *private debt* finance without Western official guarantee or the strong expectation of comfort. Nonetheless, banks will be pressured for new money or reduction of existing claims, perhaps in the context of the 1989 Brady Initiative. The pressure has begun in the case of Poland, no matter that banks hold less than one-quarter of Poland's $40 billion debt versus the two-thirds owed to Western official creditors. The banks' steering committee and the officials' Paris Club met jointly in January on

Poland's needs. Many banks may lean to debt reduction, and the officials to further rescheduling. But the officials will stay wary of cutting back their claims, lest middle-income borrowers elsewhere in the world demand similar relief.

More certain, and in large measure for political reasons, is a major pickup in the flow of official finance to East Germany and to other Eastern countries making credible efforts to right their economies. Closer links with Western multilateral institutions should help. Hungary, Poland, and Romania have been members of the IMF and the World Bank for some years already. Czechoslovakia now is expected to apply for Fund membership, and Bulgaria is considering the possibility.

Given genuine commitment to reform, the Bretton Woods sisters have much to offer both in advice and in cash, whether from their own resources or by triggering other official credits. Indeed, Fund programs are almost prerequisite to assistance from the EC, Japan, and the United States. Hungary has begun reforms with an eye to a Fund package and a $1 billion credit tentatively pledged from Western governments. And Poland already has reached an IMF accord intended to provide $700 million in Fund credit over 13 months and later this year may qualify for substantially greater Fund support. Related to its initial IMF accord is an early $1 billion currency stabilization loan from Western governments and up to $1.7 billion in possible World Bank credits.

As do other would-be reformers, Poland faces a daunting stabilization challenge. It must secure and maintain wage restraint as it removes subsidies, hikes prices for essentials, and otherwise tackles fiscal imbalance and the inflationary legacy of monetary "overhang."* Poland's New Year package attempts shock therapy, including a sixfold wintertime leap in house-coal prices and overall inflation of nearly 80% in January alone. The government hopes that underindexing of wage increases will bring inflation down to 5% monthly before midyear. In the process it anticipates a 2%-3% drop in output this year and a 20% plunge in real incomes from prior (overstated) levels. More drastic declines can hardly be ruled out, and up to a million job losses — 6% of the labor force — may come to pass in an economy unprepared for open unemployment.

The Polish government further is staking its political credit on structural reforms, including privatizations. The logic is not merely that market forces should determine prices, including ultimately the newly devalued exchange rate, but also that individuals and enterprises should respond affirmatively so as to supersede central planners and allocate economic resources efficiently. This goal, however, assumes a profit motivation and entrepreneurial flare that have been largely suppressed for four decades. Moreover, the legal, regulatory, fiscal, accounting, and banking frameworks are hardly

*Under price controls, incomes and purchasing power may exceed the value of goods available, leaving queuing to handle the imbalance. If price rationing is introduced and eliminates queues, prices must rise not only to balance income and goods flows, but also in the short run to mop up excess savings accumulated in the past. The problem is complicated in Poland's case by the estimated $6.5 billion in hard-currency circulating cash and deposits in the banking system, whose purchasing power cannot be eroded by zloty depreciation or normal demand management.

up to scratch for the job of nurturing a competitive market.

Poland's overall program is unquestionably bold. The government's political honeymoon gives some leeway for the stabilization shock therapy to work, this almost certainly being the best strategy to arrest incipient hyperinflation. The fate of the structural reforms is more difficult to evaluate. No road map exists for the successful conversion of sometime Stalinist economies to a dynamic market model. Little guidance is available from the halfhearted exercises previously tried in Poland and elsewhere. Nor do the histories of most reform efforts in Latin America suggest a clear way forward.

Western governments are groping to come up with constructive ways to increase the chances for successful reforms in the East, aware that the new leaderships there lack experience and may be vulnerable to conservative reaction. A modicum of official assistance to relieve stabilization hardships can hardly be questioned. There is a danger, however, that large-scale provision of official funds — perhaps through the proposed European Bank for Reconstruction and Development — would wind up underwriting uncompetitive public-sector showpieces rather than seeding private initiatives.

More valuable to the Eastern economies than gifts or loans from Western governments would be increased joint venturing and other direct investments by Western firms. Many joint ventures are indeed getting under way, and General Electric's deal with Hungary's Tungsram lighting firm is a prominent recent instance of direct investment interest. Besides bringing Western technical, managerial, and marketing know-how, along with capital goods, such investments potentially are the best bet to allay the Eastern economies' acute shortage of marketable products and foreign exchange and to begin rebuilding their access to bank credit from the West. To realize the potential requires that existing deterrents be eliminated. Thus, as East Germany moves to lift its joint venture ban, it would make little sense to install a restrictive successor regime. More generally, foreign investors require credible and predictable legal, regulatory, and fiscal arrangements to define property rights and allow profit repatriation at will or within an acceptable time horizon. These arrangements are needed in any event for markets to function. But they will not come into place overnight, least of all while political systems remain in flux.

An ideal investment environment, from the standpoint of resource allocation, would forswear arbitrary export performance requirements of foreign investors, ownership limits, or other discrimination against them. This will not be easy for economies subject to ethnic or nationalist sensitivities, of which foreign investors in turn must be mindful. Still, nondiscrimination is important in investment matters, not least so that the Eastern economies may develop constituencies in the West to improve their trade access to Western markets, in particular those of the European Community. Currently, only East Germany enjoys any degree of free access to the EC, its trade with West Germany being treated as intra-EC trade free of tariffs and quotas.* Over time, the Eastern countries will have to win trade privileges in the EC comparable to those enjoyed by

*Market access alone, however, will not bring out the Eastern economies' comparative advantage unless their currencies also are realistically valued — which means aligning "official" and black market rates at levels that maintain, and preferably build, competitiveness — and the controls and subsidies are dismantled that still block internal transmission of world market forces.

EFTA members, ultimately leading to their effective integration with the West European economy. Such privileges may not be won easily, given that new economic competition from the East will not be universally welcomed, not to mention the thorny issues of democracy, human rights, and security arrangements still to be worked out in the East.

All told, the Eastern countries will need many years to transform themselves into dynamic market economies. Certainly, increases in trade and investment vis-à-vis the East will not prove a substantial *direct* stimulus for the West in the short run. *Indirectly*, however, and despite the risk of setbacks, the changes in Eastern Europe should be a plus for general investor confidence in the West, particularly in Western Europe. They also must be expected to spur cuts — of cumulatively major proportions— in Western defense outlays. By the mid-1990s, the consequences for the West should not be belittled in either respect, whether or not the Eastern countries themselves attain prosperity.

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Information herein is from sources considered to be reliable but is furnished without responsibility on the part of Morgan Guaranty Trust Company.

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Effective exchange rates — industrial countries

Index numbers, 1980-82 average=100.

	United States	Canada	Japan	Australia	France	Germany	Italy	United Kingdom	Austria	Belgium	Neth-erlands	Spain	Swit-zerland	Den-mark	Norway	Swe-den
Nominal against 15 other industrial-country currencies																
1985	127.0	92.8	115.9	76.3	85.5	107.8	82.1	88.2	104.2	89.6	104.0	75.6	109.5	95.1	95.6	83.9
1986	106.0	87.6	150.1	61.4	87.4	116.1	82.9	80.7	107.8	92.9	110.3	73.4	118.1	99.7	89.2	81.6
1987	94.1	89.6	164.4	58.3	87.1	122.0	82.3	79.0	110.8	95.6	114.6	73.1	123.1	102.8	85.7	80.1
1988	88.0	95.6	181.6	61.9	85.7	121.8	79.8	83.8	110.2	94.6	114.4	75.6	121.9	101.2	85.6	80.3
1989	91.3	100.5	172.8	65.6	84.9	121.0	80.6	81.3	110.0	94.2	113.6	78.9	115.8	99.0	85.8	81.2
1989																
February	88.5	99.3	183.8	68.6	84.0	120.2	79.9	85.4	109.5	93.6	112.8	79.0	117.7	98.0	86.0	80.7
March	89.7	99.1	181.1	66.2	84.6	120.4	79.7	84.3	109.5	93.7	112.9	79.2	116.2	98.0	86.0	80.8
April	89.9	99.8	179.4	65.4	84.9	120.6	79.9	83.9	109.9	93.9	112.9	79.6	113.8	98.2	86.2	81.2
May	92.6	100.1	174.7	64.7	84.5	120.0	80.2	83.0	109.7	93.6	112.8	78.6	112.3	97.7	86.2	81.5
June	94.7	100.1	168.8	64.7	84.3	120.1	80.7	80.2	109.6	93.8	113.1	76.9	116.0	98.0	86.1	81.7
July	92.0	100.2	170.1	63.1	84.7	120.8	81.2	81.1	109.8	94.2	113.5	78.9	116.8	98.9	85.7	81.3
August	92.5	101.6	170.0	64.2	84.7	120.2	81.5	80.5	109.6	93.9	113.2	78.7	116.3	98.5	85.8	81.5
September	93.8	101.2	166.3	65.8	84.7	120.2	81.3	80.1	109.4	93.9	113.1	78.6	115.9	98.4	85.8	81.7
October	91.8	101.5	167.6	64.9	85.5	122.0	80.6	78.7	110.5	94.5	114.2	78.6	116.1	99.6	85.6	81.3
November	91.4	101.9	165.2	65.6	85.9	122.9	81.0	77.0	111.0	95.2	115.0	79.1	115.6	101.0	85.4	80.7
December	89.7	102.2	162.6	65.0	86.8	125.0	81.1	75.6	111.6	96.3	116.4	79.4	114.9	102.8	85.3	79.6
1990																
January	89.0	100.9	159.5	64.0	87.5	125.2	81.0	76.6	112.3	96.6	116.7	79.4	116.0	103.5	85.4	79.3
Real against 15 other industrial-country currencies																
1985	122.3	96.4	97.0	89.4	100.5	96.7	100.2	92.9	103.3	85.3	96.6	92.4	98.0	101.3	99.7	96.8
1986	102.4	93.6	115.4	79.6	103.5	103.4	102.9	87.4	106.8	84.8	101.3	94.2	106.0	107.8	97.7	96.3
1987	91.8	96.8	119.6	81.8	104.8	106.9	103.8	87.5	108.9	84.7	104.2	96.2	110.1	112.1	100.9	95.8
1988	87.4	104.7	125.9	91.1	102.2	106.2	104.2	94.4	107.6	81.5	100.7	100.8	107.1	112.0	102.1	99.3
1989	91.8	108.1	118.2	98.1	100.2	104.7	107.9	93.6	107.2	80.2	97.5	106.6	100.3	110.3	101.5	104.9
1989																
February	89.2	108.3	124.1	101.8	99.3	104.7	106.9	97.5	106.5	79.7	96.6	106.4	101.8	108.4	102.2	103.4
March	90.3	108.3	122.3	98.2	99.8	104.6	106.6	96.2	106.0	79.7	97.5	106.7	100.7	108.7	101.8	104.0
April	90.3	108.3	123.1	96.5	100.1	104.4	106.7	95.8	106.4	80.0	98.4	106.8	98.6	109.0	101.6	104.7
May	93.0	108.0	120.0	96.1	99.4	103.7	107.5	95.0	106.0	80.2	97.9	105.9	97.6	108.9	102.4	105.0
June	95.0	107.6	116.6	95.9	99.2	103.8	107.9	91.9	106.6	80.2	97.7	103.8	100.7	109.0	102.6	105.3
July	92.3	107.7	117.5	94.2	100.1	104.5	108.7	93.4	108.8	80.4	96.3	106.9	101.0	109.9	101.2	105.0
August	92.8	109.1	117.2	96.2	100.1	103.8	109.0	92.9	108.6	80.2	96.3	106.8	100.5	109.9	100.8	105.7
September	94.0	108.3	114.8	99.0	100.0	103.7	109.0	92.7	106.6	80.0	96.8	106.7	100.4	110.3	101.5	105.8
October	92.6	107.9	114.7	98.0	100.8	105.1	108.1	91.3	107.5	80.4	97.8	106.9	100.7	111.8	101.0	105.2
November	92.2	108.0	113.0	99.5	101.4	105.7	108.9	89.6	108.0	80.5	98.4	107.6	100.4	113.7	100.8	106.1
December	90.5	107.8	111.2	99.1	102.5	107.4	109.2	88.2	109.0	81.4	99.7	108.0	99.7	115.7	100.4	104.6
1990																
January	89.9	105.9	108.7	97.8	103.0	107.4	109.0	90.3	110.0	81.6	99.9	108.9	100.1	115.8	100.9	105.3
Real against 18 other industrial-country and 22 LDC currencies																
1985	123.8	99.1	101.9	90.0	100.0	95.8	99.8	92.4	102.9	84.5	94.8	93.1	97.7	101.2	100.0	96.8
1986	107.8	94.7	120.0	81.4	104.2	104.7	104.4	88.3	107.7	85.4	101.3	96.8	107.9	108.3	98.5	97.1
1987	97.8	97.0	123.3	83.3	106.1	109.3	106.5	89.3	110.5	85.9	105.2	99.8	113.1	113.1	102.0	97.1
1988	92.4	104.3	128.9	92.1	102.8	107.6	106.1	95.6	108.7	82.2	101.0	103.7	109.2	112.8	102.9	100.2
1989	96.3	108.1	121.5	98.6	100.4	105.1	109.1	94.2	107.8	80.4	97.1	109.2	101.8	110.7	102.1	105.0
1989																
February	93.7	107.9	127.3	102.9	99.4	105.0	107.9	98.2	107.1	79.8	96.1	108.4	103.1	108.9	102.9	103.7
March	95.2	108.3	125.7	99.0	100.0	105.0	107.7	96.9	106.6	79.9	97.1	109.1	102.0	109.2	102.5	104.2
April	95.6	108.3	127.0	97.5	100.3	104.9	108.2	96.4	107.0	80.2	98.1	110.0	100.1	109.5	102.3	104.8
May	98.0	108.3	124.2	96.7	99.6	104.1	108.8	95.5	106.5	80.2	97.4	109.1	99.0	109.3	103.0	105.1
June	99.4	108.0	120.3	96.2	99.3	104.0	109.0	92.3	107.1	80.2	97.0	106.4	102.0	109.4	103.2	105.2
July	96.9	107.8	120.7	94.9	100.4	105.0	110.0	94.0	109.4	80.5	95.9	109.6	102.5	110.3	101.7	105.0
August	97.2	109.1	120.4	96.5	100.3	104.1	110.1	93.3	109.1	80.2	95.7	109.3	101.8	110.2	101.3	105.6
September	97.9	108.4	117.8	99.0	100.1	103.8	109.9	93.0	107.0	80.0	96.1	109.0	101.6	110.6	102.0	105.6
October	96.7	107.8	117.5	98.3	101.0	105.5	109.3	91.9	108.1	80.6	97.4	109.4	102.2	112.2	101.5	105.1
November	96.2	107.9	115.6	99.7	101.7	106.2	110.1	90.0	108.7	80.8	98.1	110.2	102.0	114.1	101.3	106.0
December	94.7	107.5	113.5	99.4	103.0	108.5	111.0	88.9	110.0	81.9	99.8	111.1	101.7	116.1	100.8	104.6
1990																
January	93.7	105.6	109.0	98.3	103.5	108.6	110.4	90.4	111.0	82.2	100.0	111.9	101.9	116.2	101.3	105.2

Real effective exchange rates — developing countries

Index numbers, 1980-82 average=100.

	Argentina	Brazil	Chile	Colombia	Mexico	Peru	Venezuela	Hong Kong	Indonesia	Korea	Malaysia	Philippines	Singapore	Taiwan	Israel	Turkey
1985	71.2	85.0	79.6	85.5	90.5	96.8	93.0	103.5	94.5	89.3	126.7	114.5	95.6	94.5	224.4	71.8
1986	61.3	74.7	69.0	67.9	65.3	97.1	89.5	93.9	72.8	76.3	103.1	90.8	80.8	89.1	62.7	57.1
1987	53.9	74.2	65.7	63.6	67.1	108.4	65.0	89.9	56.1	75.6	96.5	87.6	74.5	94.6	49.4	45.1
1988	59.7	81.2	60.8	61.3	80.0	124.5	71.9	90.6	54.0	82.3	85.0	89.4	73.1	100.1	50.7	59.7
1989	49.9	97.9	62.2	60.2	76.7	186.0	65.2	98.7	55.8	92.3	82.9	95.8	78.1	105.6	61.9	61.9
1989																
February	71.6	82.2	62.5	60.4	78.1	129.2	96.8	93.5	53.7	89.4	79.9	92.4	77.1	102.2	58.5	61.2
March	79.5	83.9	61.9	62.0	78.4	140.4	48.5	95.8	54.4	90.6	79.9	92.2	77.2	103.0	60.1	61.0
April	39.0	88.3	64.1	61.7	78.0	165.0	51.9	97.4	54.6	91.5	80.5	92.1	77.1	104.8	60.8	62.2
May	29.0	92.9	67.4	61.5	78.1	171.2	59.3	101.4	55.9	93.8	83.2	94.7	78.8	109.9	63.0	64.7
June	43.0	95.0	64.6	61.5	77.6	189.5	64.3	102.3	57.0	95.3	85.5	96.1	79.7	109.7	64.0	66.6
July	49.2	93.0	61.3	60.9	76.0	187.0	64.5	98.3	56.0	93.2	85.7	93.7	78.4	107.2	61.5	64.7
August	48.4	102.3	61.1	61.0	75.3	191.2	64.3	98.6	56.8	93.6	86.2	96.5	78.6	108.1	62.3	63.4
September	49.1	112.0	61.4	60.4	75.2	204.7	68.2	100.9	57.4	94.5	86.4	99.1	79.1	108.2	63.4	61.7
October	48.6	113.6	60.6	58.7	74.2	225.0	67.0	100.0	56.8	92.8	83.8	99.0	78.2	105.7	63.1	56.8
November	49.0	118.5	59.4	57.8	73.4	264.5	63.8	103.1	56.8	92.4	82.8	99.4	77.8	104.3	64.0	57.4
December	41.4	117.0	58.5	56.8	72.7	319.6	64.8	101.0	56.0	91.0	80.9	100.2	78.1	102.0	62.5	55.3
1990																
January	28.9	108.3	59.4	58.2	72.2	432.5	67.8	97.4	55.8	87.4	80.5	100.9	78.6	99.2	57.2	53.7

J.P. Morgan Government Bond Index

index of total return for traded bonds, December 31, 1987=100
end of month

	1988	*1989*										*1990*
	Dec	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Jan*
In local currencies												
Australia	109.77	110.20	112.32	111.33	114.18	116.12	119.03	116.76	118.57	122.28	124.83	127.16
Belgium	108.72	109.07	110.61	110.95	111.71	112.44	113.23	113.05	112.08	110.85	110.91	109.44
Canada	109.08	110.15	113.12	115.95	119.09	120.94	119.67	118.98	121.87	121.22	122.99	122.02
France	116.24	116.37	118.41	118.70	120.02	123.16	123.58	121.63	121.54	121.26	121.06	120.33
Germany	105.23	104.00	104.97	104.52	106.17	107.64	107.04	106.50	106.23	105.28	106.26	104.43
Italy	111.62	113.27	114.98	115.98	117.33	118.79	120.28	121.59	122.37	123.26	125.01	126.17
Japan	105.89	104.62	104.76	104.32	103.92	105.95	106.12	106.09	104.87	104.80	104.30	100.44
Netherlands	106.06	104.20	104.84	103.82	105.80	107.11	106.96	106.47	106.33	105.46	105.88	104.68
Spain	109.73	111.75	112.75	113.56	114.67	115.82	117.27	118.47	119.25	119.66	119.82	122.24
United Kingdom	106.74	109.58	110.04	108.91	109.97	114.11	114.20	112.18	113.51	112.75	115.29	112.58
United States	106.78	107.94	110.18	112.73	116.44	118.84	116.84	117.36	120.32	121.45	121.70	120.06
In dollars												
Australia	129.84	125.08	123.57	115.97	119.48	122.26	125.91	125.63	128.58	132.78	136.50	135.54
Belgium	96.23	90.23	92.22	88.26	89.97	94.65	90.76	94.52	95.61	97.64	102.74	102.36
Canada	118.89	119.98	123.97	124.99	129.38	133.16	132.13	131.34	134.92	135.40	138.06	133.65
France	102.22	96.78	99.10	94.18	96.29	103.85	99.13	101.81	103.65	106.03	111.33	111.69
Germany	93.36	86.06	87.62	82.98	85.35	90.71	85.46	89.21	90.68	92.74	98.56	97.11
Italy	98.97	94.50	96.83	93.94	96.26	102.92	99.14	103.15	105.14	108.79	114.27	116.73
Japan	102.63	95.38	95.45	88.71	87.54	93.73	88.56	92.21	89.02	88.74	87.70	84.17
Netherlands	93.69	86.03	87.29	82.34	84.91	89.98	85.25	88.90	90.48	92.68	97.93	97.19
Spain	103.93	101.87	103.85	96.82	99.14	106.39	102.75	106.86	109.79	111.57	117.52	120.50
United Kingdom	102.47	97.93	98.57	90.83	90.53	100.71	94.97	96.12	95.10	93.83	98.66	100.27
United States	106.78	107.94	110.18	112.73	116.44	118.84	116.84	117.36	120.32	121.45	121.70	120.06
Global	105.47	103.45	105.20	104.18	106.56	110.84	107.62	109.38	110.80	111.80	113.16	111.48
Global excluding United States	102.07	96.00	97.03	91.42	92.14	98.53	93.83	96.93	96.47	97.27	99.86	98.19

Government bond yields

by maturity sectors in years, for traded bonds included in the J.P. Morgan Government Bond Index
in percent per annum (semiannual basis), at end of month

	1987	1988	1989										1990
	Dec	Dec	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Australia													
1-3	11.38	13.78	14.95	14.67	15.44	15.00	14.78	14.43	15.48	15.49	14.73	14.30	13.61
3-5	11.97	13.71	14.62	14.37	15.06	14.47	14.28	13.88	14.82	14.68	13.99	13.57	13.22
5-7	12.51	13.34	14.14	13.92	14.45	14.08	13.92	13.52	14.38	14.28	13.74	13.39	13.19
7-10	12.89	13.08	13.82	13.56	14.10	13.75	13.62	13.10	13.91	13.79	13.28	13.01	12.89
10+	12.98	13.00	13.59	13.34	13.86	13.45	13.34	12.93	13.65	13.50	13.00	12.87	12.75
Belgium													
<5	7.91	7.82	8.40	8.20	8.37	8.39	8.36	8.30	8.62	9.08	9.69	9.74	10.28
5+	8.09	8.00	8.38	8.20	8.25	8.24	8.24	8.26	8.42	8.81	9.23	9.44	9.98
Canada													
1-3	9.75	10.60	11.51	10.81	10.46	9.87	9.71	10.33	10.34	10.07	10.69	10.64	10.58
3-5	9.84	10.38	10.99	10.39	10.02	9.54	9.30	9.88	10.10	9.91	10.26	10.05	10.21
5-7	10.08	10.24	10.67	10.16	9.77	9.38	9.16	9.64	9.95	9.64	9.92	9.76	10.03
7-10	10.03	10.22	10.53	10.11	9.72	9.32	9.17	9.56	9.83	9.55	9.79	9.65	10.00
10+	10.12	10.21	10.28	10.02	9.74	9.42	9.27	9.50	9.78	9.40	9.61	9.51	9.89
France													
1-3	9.10	8.16	8.77	8.54	8.75	8.77	8.40	8.48	8.94	9.18	9.52	10.01	10.18
3-5	9.40	8.32	8.89	8.61	8.76	8.75	8.28	8.39	8.88	9.20	9.32	9.65	9.93
5-7	9.60	8.26	8.72	8.53	8.65	8.60	8.15	8.25	8.75	8.99	9.13	9.32	9.62
7-10	9.69	8.38	8.77	8.52	8.62	8.52	8.14	8.23	8.64	8.75	8.98	9.12	9.44
10+	9.75	8.57	8.93	8.69	8.76	8.66	8.29	8.34	8.76	8.82	9.03	9.14	9.42
Germany													
<5	4.85	5.87	6.77	6.72	6.96	6.80	6.58	6.86	7.15	7.40	7.66	7.57	8.01
5-7	5.71	6.21	6.82	6.76	7.01	6.81	6.60	6.85	7.07	7.27	7.61	7.48	7.99
7+	6.25	6.44	6.85	6.75	6.92	6.70	6.55	6.77	6.95	7.09	7.39	7.33	7.81
Italy													
1-3	10.90	11.40	12.62	12.41	13.28	13.37	13.46	13.43	13.42	13.60	13.69	13.53	13.63
3+	10.62	12.74	13.49	13.37	13.51	13.36	13.32	13.35	13.33	13.60	13.79	13.68	13.79
Japan													
1-3	3.82	3.88	4.68	4.72	5.08	5.09	4.98	5.00	5.23	5.64	5.91	6.04	6.61
3-5	4.09	3.94	4.70	4.73	5.00	5.16	4.93	5.00	5.15	5.55	5.82	5.95	6.51
5-7	4.38	4.04	4.72	4.75	4.88	5.13	4.84	4.90	4.99	5.33	5.49	5.75	6.48
7-10	4.84	4.62	4.90	4.96	5.11	5.25	4.92	4.97	5.05	5.33	5.39	5.56	6.46
10+	5.62	4.94	5.06	5.07	5.19	5.17	5.19	5.19	5.12	5.33	5.39	5.54	6.25
Netherlands													
1-3	5.13	5.99	7.02	7.03	7.39	7.15	7.00	7.21	7.45	7.79	8.19	8.42	8.54
3-5	5.89	6.07	6.95	6.94	7.30	7.05	6.87	7.06	7.34	7.53	7.88	7.91	8.31
5-7	5.99	6.13	6.97	6.94	7.31	7.01	6.84	7.02	7.27	7.42	7.78	7.84	8.24
7+	6.23	6.34	7.00	6.98	7.32	7.00	6.87	7.02	7.20	7.36	7.66	7.71	8.15
Spain													
1-3	13.62	12.78	13.39	13.45	13.46	13.46	13.50	13.42	13.47	13.63	13.92	14.46	13.97
3+	14.70	11.79	12.21	12.27	12.60	12.80	12.73	12.73	12.93	12.32	13.32	13.77	13.47
United Kingdom													
1-3	9.17	11.32	11.22	11.40	11.96	11.90	11.10	11.31	12.42	11.98	12.52	12.38	12.83
3-5	9.25	10.72	10.67	10.80	11.20	11.10	10.36	10.55	11.34	11.11	11.52	11.24	11.92
5-7	9.46	10.58	10.46	10.57	10.93	10.91	10.27	10.44	11.12	10.96	11.34	11.06	11.71
7-10	9.63	10.23	10.12	10.23	10.59	10.56	9.99	10.13	10.64	10.58	10.88	10.59	11.28
10+	9.67	9.79	9.81	9.79	10.12	10.09	9.64	9.76	10.15	10.15	10.43	10.17	10.79
United States													
1-3	7.69	9.14	9.77	9.24	8.84	8.11	7.62	8.40	8.46	7.92	7.78	7.90	8.30
3-5	8.19	9.15	9.64	9.15	8.77	8.10	7.58	8.35	8.43	7.91	7.81	7.92	8.39
5-7	8.50	9.19	9.48	9.11	8.71	8.12	7.67	8.33	8.40	7.95	7.84	7.98	8.43
7-10	8.76	9.18	9.35	9.06	8.66	8.14	7.78	8.31	8.37	7.97	7.89	7.99	8.45
10+	8.99	9.11	9.23	9.02	8.69	8.15	7.97	8.34	8.38	8.02	7.99	8.08	8.56

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World Financial Markets

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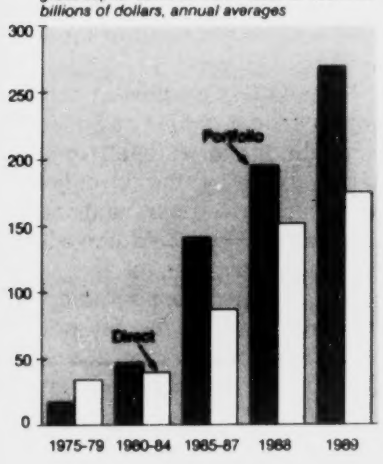
Chart 1

Private international investment

gross capital outflows from industrial countries billions of dollars, annual averages*



*G-10 plus Australia, Spain, and Switzerland
Source: BIS.

*Adam Smith: managing the global capital of nations**

Policymakers have wrestled since the demise of the gold standard in World War I how best to balance reasonably free trade and reasonably free capital flow across national borders. The two freedoms make uneasy bedfellows at the best of times. Even today, their coexistence cannot be taken for granted, but instead must be *earned* by careful international management.

For thirty years following World War II, priority for liberalization went to trade. Few had faith in a liberal regime for private international capital flows. In the 1960s, even the United States instituted selective controls as gold reserves dwindled. Not until January 1974 did capital freedom regain favor. U.S. controls were lifted to allow bank-intermediated recycling of OPEC's huge surpluses. Liberalization gradually spread, aided by floating dollar exchange rates and technological advance, and inspired by investor and borrower interest in freedom of choice and diversification. Crucial too have been Japan's financial maturation and, more recently, the broadened horizons of "1992" and Europe's push toward Economic and Monetary Union (EMU). The upshot has been an explosion of private international capital flows (see Chart 1).

Capital flow freedom has won the hearts and minds of policymakers, contrary to earlier instincts. Despite the misgivings of some academics, this freedom is here to stay for good or ill. The effect on global economic efficiency should be positive, but not under all conditions. In particular private capital flows dominate exchange markets and can hamper economic and trade adjustment through currency misalignment, which in turn heightens pressures for restraint of trade. Worse, the instability of some private capital flows may engender financial "bubbles" or "manias," to use the colorful terms of historians. Latin America's bubble burst eight years ago in a sobering example of how easy financing in the short term can have costly and intractable

*Shortened version of a paper presented by Rimmer de Vries, Managing Director, Morgan Guaranty Trust Company, to the *World Business Forum's* conference "The Wealth of Nations 1990," Edinburgh, June 27-July 1, 1990.

consequences in the long run. Sooner or later, all bubbles burst — but all too often are not seen as bubbles until too late in the day.

What can be done to capture the benefits, and alleviate the risks, posed by free-ranging private capital? The nineteenth-century gold standard offers no model; it actually was harsh on economic growth and financial stability, contrary to rose-tinted memories, and left little room for policy autonomy. The Bretton Woods system protected free trade and provided some policy autonomy but had to be backed by currency market intervention and control of "undesirable" capital flows. The more recent Louvre accord, which stressed monetary management and currency reference zones, has done little for financial stability and has held free trade in jeopardy, especially between Japan and the United States.

For the future, a new approach is needed for an optimal blend of trade and capital freedom. To avoid further drift toward "managed" trade, fundamental policies require rethinking. As the *sine qua non* of financial and currency calm, price stability warrants the highest governmental priority. Many countries, notably those inclined toward union, as in Europe, should opt for pegging their currencies to that of a low-inflation partner, or for outright currency union. By contrast, the more variegated G-3 economies should find discretionary, domestically oriented monetary policy superior, given central bank accountability but independence of political control; G-3 exchange rate flexibility is useful in coping with residual inflation differentials and structural changes born of evolving technology and comparative advantage.

Often more sudden can be changes in global saving and investment trends and consequent current account imbalances. Examples include the oil shocks of the 1970s, the Reagan economic program, and, most recently, the regime shifts in Eastern Europe. Exchange rates respond to abrupt changes in fundamentals. But neither exchange rate management nor monetary policy can do much to influence these fundamentals for the better. Not so, by contrast, fiscal policy.

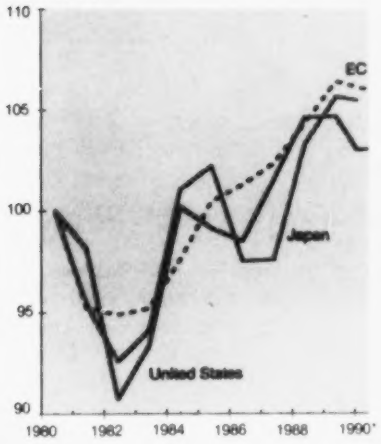
If G-3 consultation is to retain relevance, the focus has to shift from complacency whenever exchange rates can be pronounced "consistent with fundamentals," or from market jawboning and monetary tinkering to try to make them so, to a coherent effort to redress failings in the fundamentals themselves. Dumping this burden on central banks, as has been the custom, is no answer except for enforcing monetary prudence. G-3 exchange rates largely should be left to find their own way. The real need is for longer-term fiscal and structural matters, nationally sensitive though they be, to take over at the head of the G-3 agenda.

Revised G-3 priorities become urgent in light of today's key fact: competition for limited global saving bred by the investment demands of German unification and Eastern Europe's liberation, the implementation of the EC's single market, the upgrading of U.S. industry, the unmet needs of Latin America, Asia, and Africa, plus the eventual restructuring of the Soviet Union and global environmental cleanup. Though not coming into play overnight, the aggregate of these

Chart 2

Capacity utilization in manufacturing

annual averages
1980=100

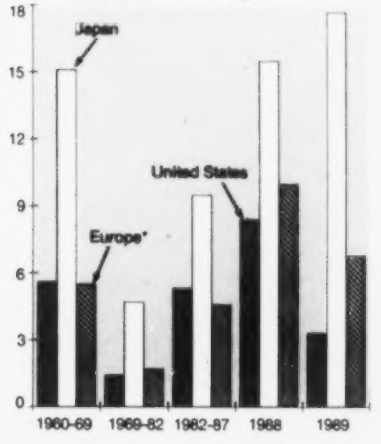


*Latest plot 1990 Q2 except Japan, 1990 Q1

Chart 3

Business investment

real private nonresidential fixed investment
annual average percent change



*Germany, France, Italy, and United Kingdom
Source: BIS

demands could be staggering and could burden capacity in the major economies where, apart from the United States, investment has been vigorous for some time already (see Charts 2 and 3).

The immediate challenge is clear. U.S. commitment to price stability has to be brought into place. In addition, attention to fundamentals rather than symptoms requires that global saving be beefed up. For the United States, this is mainly a matter of steering much of its peace dividend to the federal government's financial bottom line, so that the deficit ceases to bleed off scarce national saving. Some European countries, including uniting Germany, also will need fiscal corrections. Structurally, Europe must yield on agricultural protectionism; otherwise, the "Uruguay round" of multilateral trade negotiations will surely fail. Japan has to deliver on its promises under the Structural Impediments Initiative, retune its monetary/fiscal policy mix, and rethink its capital export objectives to hold trade and investment frictions at bay.

With progress on these counts, a workable marriage of free trade and free capital flow can emerge. The industrial countries would offer markets for Eastern Europe and the third world to develop their comparative advantages and would be positioned to provide the real resources to handle the new investment needs — once the recipients are ready.The form of the input will be as important as the scale. Ten years ago, banks provided a disproportionately high share of financing to Latin America, with little going in as private direct investment. This was unsound. Banks now are likely to stick mainly to trade financing and advisory work. Equity and direct investors are better placed to see that resources work for investors and recipients alike.

All these things will take political courage. The dangers of inaction, however, should be compelling. Japan or Europe could shun the responsibilities implicit in their enlarged global standing. Or U.S. fiscal paralysis could drive up interest rates to the detriment of an already struggling U.S. economy. Such failings would be a formula for regional-block thinking, managed trade, and attendant protectionism. These would make a mockery of today's free trade and free capital flow pretensions, and set the stage for financial instability and global economic enfeeblement.

Capital freedom's uses, abuses, and lessons

Financial markets embrace a "one-world" concept that takes the beneficence of international capital flows for granted. The general case for capital freedom is straightforward. It respects the principle that freedom of choice should not be arbitrarily constrained by historically determined, but economically extraneous, national borders. It permits capital to flow to areas and uses that offer highest prospective return to the investor or that diversify risks; overall risks may not be diminished but are reallocated in the market to those willing to bear them at least cost, not least through the unbundling of risks provided by today's financial derivatives that would be unworkable absent capital freedom. And international capital freedom is a major force for do-

mestic financial liberalization, whose efficiency benefits almost certainly greatly exceed those arising from international capital flows *per se*.

These points now seem obvious, yet today's liberal regime for capital actually is quite new and sharply at variance with thinking and practice during nearly three decades after World War II. Then, the emphasis was on free trade. Free international capital flows were seen as less beneficial and a likely source of mischief. Indeed, review of the main stages of postwar international financial history makes clear that managing freedom for trade and capital flows simultaneously is no small challenge.

The era of dollar shortage. The designers of the postwar international system judged that the trade protectionism and financial instability of the interwar period were intimately related. Liberalization focused on payments arrangements for trade in goods and services. Europe, Japan, and most other countries severely restricted private cross-border investments. The major exception was the absence of external controls in the United States, which at the time possessed most of the free world's financial wealth and gold reserves. To support its geopolitical goals, and for commercial and altruistic reasons too, the United States underwrote reconstruction by exporting capital, mainly to Europe. The U.S. government effort was embodied in the Marshall Plan. And U.S. corporations complemented the reconstruction drive by large-scale direct investment; this brought up-to-date technology and management practices in its train and provided models for European firms to emulate.

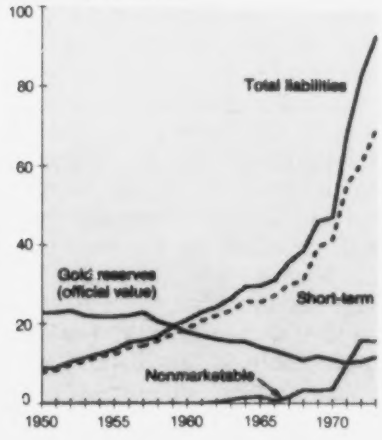
The partnership of official and private U.S. investment was enormously effective in seeding Europe's recovery. By 1958 most of Europe was able to adopt multilateral currency convertibility for traded goods and services. Two years earlier, the Treaty of Rome launched the economic integration of the original six members of the European Community (EC), mainly freeing trade rather than capital. By and large, EC investment flourished during the 1950s and 1960s. Now, having overcome the vicissitudes of the 1970s and early 1980s, the EC is forging ahead with its "1992" single market project on the way to EMU. Western Europe's success has spurred German unification, the demise of Communism, and the rise of free-market thinking across the erstwhile Eastern bloc. Thus the ultimate dividends from U.S. postwar investment indeed have proved handsome.

The twilight of Bretton Woods. By the end of the 1950s, the climate changed as U.S. gold reserves increasingly fell below U.S. liabilities abroad (see Chart 4). U.S. trade and current account surpluses continued, but were declining and insufficient to cover capital outflows. Thus, some Europeans complained that U.S. investment was being financed with Europe's own money. Moreover, U.S. ability to convert foreign official dollar holdings into gold came into question.

During the 1960s, U.S. policymakers took a number of measures to shore up the dollar's position, mainly seeking to restrain capital outflows without impeding trade. U.S. corporations were limited in financing direct investment abroad from U.S. sources. The Voluntary Foreign Credit Restraint program cur-

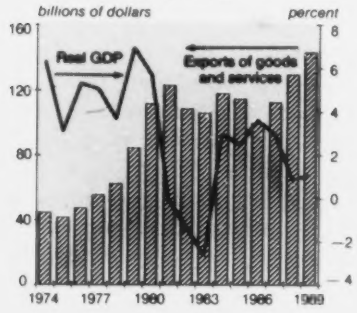
Chart 4

U.S. gold reserves and foreign liabilities



*Ten LDC debtors under two oil shocks **

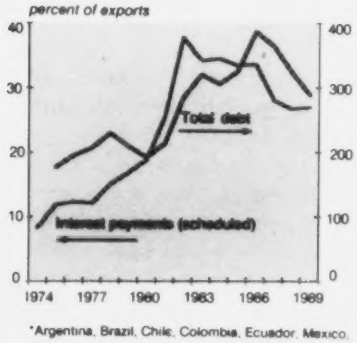
Economic performance



External financing demand

External financing supply

Debt burden



*Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, Philippines, Uruguay, and Venezuela

tailed U.S. bank lending. And, to lessen short-term official outflows, foreign monetary authorities were jawboned and offered inducements not to convert their dollar holdings.***

These measures, however, addressed symptoms rather than causes. The root cause of dollar weakness lay in inflationary U.S. policies. U.S. consumer prices, which had risen just 1.2% annually in the first half of the 1960s, rose 4.3% on average in the second. The Johnson Administration hoped vainly that economic growth would suffice to finance both the Vietnam war and "Great Society" spending with no increase in taxes; at the same time, the Federal Reserve would not take the heat for monetary stringency. U.S. inflation and excess demand later led to the 1971 lapse of U.S. trade into deficit. With continuing capital outflows and gold losses, this prompted President Nixon's suspension of dollar convertibility that August. Thus the Bretton Woods "gold-exchange" system sacrificed free capital flow for the sake of free trade, yet was doomed by U.S. unwillingness to adjust or be prisoner of the inflation sensitivity of foreigners; confidence could not survive price instability and neglect of imbalances.

Floating through the first oil shock. A new era began in January 1974, when U.S. capital controls were lifted following the first OPEC oil shock and the 1971-73 switch to floating exchange rates for the dollar.**** Quadrupled oil prices hit importing nations hard, particularly Europe, Japan, and many LDCs. Flexible exchange rates absorbed strains that might otherwise have provoked widespread currency crises. Still, innovative financing was needed to see the deficit countries through what was expected to be a difficult and extended adjustment, given the low short-term elasticity of oil demand.

It was quickly realized that financing could best be mobilized through a blend of official and private channels complemented by policy adjustment in both surplus and deficit countries. Thus were born the IMF's oil facilities, heavily funded by Saudi Arabia and benefiting Britain, Italy, and many LDCs. Otherwise, OPEC countries in surplus placed the bulk of their fast-rising assets with the international commercial banks. In turn, because the oil shock had thrown the world economy into recession and slashed corporate credit demands, the banks saw sovereign borrowers, including middle-income LDCs, as attractive takers for syndicated credits funded by OPEC deposits.

As things turned out, economic adjustment to the first oil shock proceeded swiftly (see Chart 5). Demand for oil fell away and new supply came forward from non-

**Capital flight can be estimated indirectly on a year-by-year reckoning as the current account balance *plus* net direct investment inflows, *plus* the valuation-adjusted increase in the stock of external debt, *minus* the increase in external official and banking system assets, *minus* the increase in the volume of official gold holdings multiplied by the average London gold price. The methodology, advantages, and shortcomings of this procedure were discussed in "LDC capital flight," *World Financial Markets*, March 1986.

***These capital outflow controls had one beneficial, albeit unintended, consequence. They were a shot in the arm for the nascent Eurocurrency banking and bond markets. Lightly regulated, the Euromarkets soon developed a depth, breadth, and efficiency that highlighted the inefficiencies of a segmented and controlled global financial system.

****Die-hard defenders of the defunct Bretton Woods system attributed the oil shock to the switch of currency regime.

OPEC sources. OPEC nations — notably, those dubbed "low absorbers" — soon spent their way out of surpluses as they explored their appetites for consumption and investment. The industrial countries returned to reasonable economic growth fairly quickly, albeit with unemployment lingering high. And many oil-importing LDCs gained from recovering commodity prices or their competitiveness in labor-intensive manufactures.

Amazingly, capital broadened its international horizons without precipitating trade restrictions. Indeed, in 1978, the Tokyo round of trade negotiations reached a modestly satisfactory conclusion. The overall success flowed from a good mix of adequate adjustment and complementary financing. The financing relied on effective international cooperation between oil exporters and importers tapping the Bretton Woods institutions, other official agencies, and the international commercial banks. The cooperation was forthcoming, made easier as confidence climbed that adjustment was working.

The catastrophe of the second oil shock. Confidence at first swelled to hubris in the aftermath of the second OPEC oil shock. The previously balanced approach to international adjustment gave way to complacency and excess, such that the 1978-82 period must be rated the dismal years of postwar international finance.

The major mistakes were twofold. First, after 1976 the United States was too eager to recapture pre-1974 growth of output and employment. The Federal Reserve underestimated the virulence of gathering inflation pressures. It was too gradualist in hiking interest rates, as was signaled by the October 1978 dollar crisis. Further, at the Bonn summit that year, the Carter administration pushed for faster economic growth in all the major industrial countries. In light of the unexpected new oil shock that followed shortly thereafter, this coordination effort under U.S. pressure turned out singularly ill timed; distrust of economic policy coordination lingers even today in some quarters.

Second, concerning the LDCs, the second oil shock elicited no broad-scale financing effort through bilateral and multilateral official channels. Industrial-country governments actually encouraged commercial banks to undertake the major recycling function. The banks had had a satisfactory experience with LDC lending in the mid-1970s: after surging for a time from a low base, LDC indebtedness had returned to a growth pace that looked sustainable. The banks, competing for market share and with the acquiescence of their regulators, saw no reason not to repeat a profitable exercise. The banks thought their credits safe as long as they focused on lending to governments and what appeared to be well-managed projects and companies, especially in the public sector.

In retrospect, the banks' confidence proved misplaced. Because money is fungible, state enterprise credits effectively went to finance governments whose macroeconomic policies were gravely flawed. Much of Latin America was in political flux, which rendered firm government impossible. There was little stomach for the painful adjustment that would have been necessary to correct inflation, budget deficits, and trade and current account imbalances. Be-

cause of the political and macroeconomic uncertainties, residents of many countries lacked confidence in their future and sought security for their assets by investing them abroad.

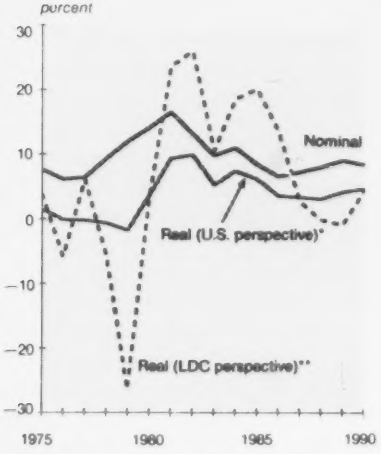
Together, the current account need and capital flight created enormous demand for external finance. Equity and direct investments were largely ruled out as objectionable to nationalist and statist sensitivities. Easier and more palatable for the borrowers was debt finance — not from official sources who might enforce conditionality but rather from the eager banks. Some Latin American borrowers further assumed that maturing loans would always be refinanced and that new loans would cover interest payments.

The music stopped not long after the United States switched to severe monetary stringency. This engendered high real rates of interest on the floating-rate credits that had allowed the banks to transfer interest rate risk to the LDCs. These high rates (see Chart 6) accelerated capital flight and precipitated a global economic recession that devastated the debtors' foreign exchange earnings. Inevitably, explosive growth of LDC financing requirements eventually exhausted the patience of both borrowers and lenders. Confidence collapsed, Latin America's debt bubble burst, and a regime of free private international capital saw *actual* flows fizzle. The dire results still felt today, for both the region and its creditors, are stern warning of the dangers of capital freedom if borrowers and lenders ignore macroeconomic realities or otherwise fail to exercise responsible restraint of risk-taking.

Chart 6

Dollar interest rates

6-month LIBOR annual averages
except 1990, 1st half



*Nominal rate adjusted for U.S. consumer price inflation
**Nominal rate adjusted for LDC export price inflation

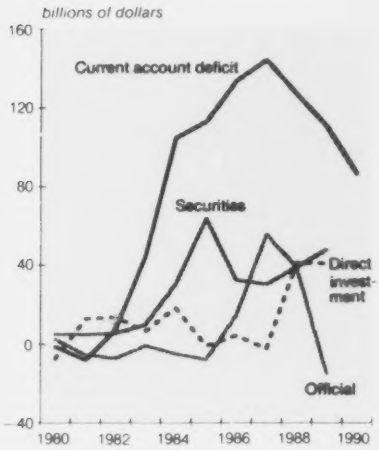
U.S. twin deficits with capital freedom but trade impairment. Besides contributing to Latin America's debacle, U.S. macroeconomic policies at the beginning of the 1980s also were parent to the infamous U.S. twin deficits on the federal budget and foreign trade. Those times marked monetarism's high noon in the thinking of officials and financial markets; both recoiled from the failed gradualism of previous counterinflationary policy, especially in the United States. Then came 1981 and the onset of global recession, exacerbated by U.S. monetary stringency and the surge in real interest rates prompted by the Reagan Administration's well-intentioned fiscal commitments.

Most of the financial community saw higher U.S. military spending along with "supply-side" tax cuts as fiscal laxity. It feared that tight monetary and easy fiscal policies would crowd out investment, keep the economy in recession, and later give way to inflationary monetization of the federal deficit. In the event, no such misfortunes came to pass, thanks mainly to the dismantling of impediments to private international capital flows. Key were Japan's Ministry of Finance decision to lift most controls from the early 1980s plus the 1984 U.S.-led move by several countries to end withholding taxes on some interest payments to foreigners. Crowding-out of the U.S. economy indeed occurred — not of investment or sheltered domestic sectors, however, but rather of foreign trade due to massive net capital inflows.

At first, the inflows were not only attracted by an appreciating dollar, high real U.S. interest rates, and U.S. profit opportuni-

Chart 7

U.S. net capital inflows



ties, but also propelled by lost investment alternatives in Latin America and excess domestic saving in Japan and an overregulated, economically lagging, Europe. Later, after the dollar peaked, central bank intervention in the currency markets sometimes provided a portion of the inflows. Still, the bulk has come from private investors. Rather than being intermediated by banks, much takes the form of portfolio investment or — increasingly in recent years — direct investment by foreign companies building stakes in the U.S. economy (see Chart 7).

Plainly, while allowing the U.S. trade and current account deficits to run even today at about $80 billion annually, these capital inflows have enabled the United States to continue economic growth and pursue a decidedly gradualist approach to trade and budget deficit correction. Some thought the twin deficits would trigger collapse of the dollar and a financial "hard landing." This dire view no longer enjoys much credence. Collapse has not come to pass, even though both deficits by now are long-standing.*

Yet, just as complacency following the first oil shock proved unjustified, so too is complacency foolhardy today. The world economy may have suffered excess saving relative to investment opportunities during much of the 1980s; and the risk-reward characteristics of investment may still be perceived as more attractive in the U.S. economy than elsewhere. But neither condition can be extrapolated forever. U.S. inflation remains stubborn and the economy soft, whereas most other industrial economies now operate at fairly full capacity. New demands are coming along from Eastern Europe and, to a modest extent, Latin America to which some flight capital is returning. Amid these rival claims on foreign saving, financing of the U.S. twin deficits could grow steadily more costly.

Another difficulty is that tolerance by investors of the U.S. external deficit is less than gladly shared by the U.S. Congress and electorate. True, deficit financing by portfolio investment and bank money is barely noticed, or else is welcomed as unconditional financing of domestic demand — not unlike Latin America's attitude toward bank financing ten years ago. But opposition to foreign direct investment appears on the rise, compounded by unease concerning the competitiveness of U.S. corporations. Moreover, the trade deficit has been a principal force behind the 1988 Omnibus Trade Act and the growth of U.S. protectionism. The Act authorized the Administration to pursue multilateral trade liberalization in the current "Uruguay round." But, in addition, it streamlined unilateral import protection procedures and endorsed aggressive bilateralism to open markets abroad, including through the notorious "Super 301" clause. This bilateralism has been seen again in the U.S.-Canadian free trade area, the

*Even when the domestic economy booms and the U.S. trade deficit widens, increasing domestic profits and interest rates may pull in enough investment from abroad to avert downward pressure on the dollar. In addition, in the absence of capital controls, foreign dollar holdings can accumulate without necessarily generating pressures for adjustment, except perhaps through wealth effects. Financial assets in foreign cross-border portfolios worldwide amount to a total of some $4.6 trillion and have grown some 16% annually since 1982, thanks in part to dollar depreciation; if the dollar now holds steady in foreign exchange value and also steady at around one half of foreign holdings, the overall portfolio growth creates a demand for $230 billion annually of additional dollar assets

talk of a U.S.-Mexican arrangement, and the Bush Administration's Structural Impediments Initiative vis-à-vis Japan. Conceivably, U.S. bilateralism may advance the cause of multilateral free trade; but, if copied by others, it more likely will end in recrimination, retaliation, and escalating protection.

This extended tour of postwar financial history provides a number of lessons. First, when well applied, private international capital flows can richly reward both investor and recipient. Second, particularly in the case of bank and portfolio flows, the reward can turn to ashes. This will be the case if the *investor* throws prudence to the winds or the *recipient* — whether an LDC or the United States — takes the availability of international capital as a pretext to avoid stabilization and adjustment. Domestic and external adjustment cannot be avoided, but only postponed. If postponed too long, the adjustment can be abrupt, wrenching, and protracted: for the debtor, bringing loss of access to credit, inflationary depreciation, and economic slump; for the investor, leaving uncollectable claims and collapsed asset values.

Third, there is a certain tension in maintaining both free capital and free trade. The difficulty of repressing capital flows makes for a tendency to compensate ill effects by giving ground on free trade. To keep the tension at bay, the financial system requires incentives for investor prudence, along with penalties for the lack thereof; and governments must correct excessive trade imbalances promptly by a blend of financing and resolute adjustment credible to the international community. The challenge is not new but is nonetheless formidable.

Misguided currency coordination

It is widely held that free trade, free capital movement, and the general interests of business are best served by active management of the currency markets to stabilize exchange rates. Such management indeed makes sense for some countries. But for the G-3 it is a dangerous diversion.

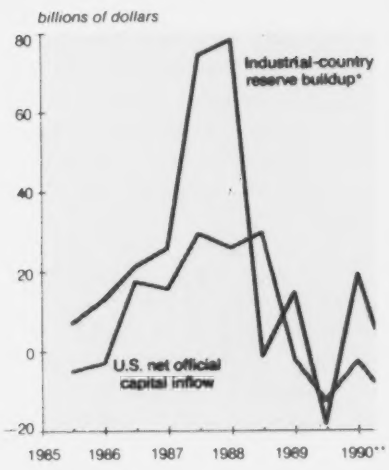
Small open economies often do best by giving up discretionary monetary policy in favor of a fixed exchange rate relationship with a principal trade partner. Many still peg to the dollar or the French franc. Obviously, pegging achieves price stability only if the partner keeps its own inflation low — hence the gravitation of EMS participants toward the mark, whose discipline is more palatable now that all are committed to European unity.

No comparable political compact binds the United States, Japan, and the EMS block. These three areas best find price stability not by fixing exchange rates but rather by resolute monetary policies that are largely domestically oriented. If their separate policies are so geared, major exchange rate shifts should not be necessary to offset residual inflation disparities but remain available as a least-cost instrument for balance of payments adjustment when needed in response to shocks, structural change, and policy failures.

Of course, the G-3 central banks cannot ignore exchange market developments. After all, monetary policy makes much of its impact through the exchange rate channel rather than the sectors traditionally sensitive to interest rates. Moreover, even for the United States and Japan, ex-

Chart 8

Dollar support



*Increase in foreign exchange reserves of industrial countries excluding United States

**Latest plot 1990 Q1

change rate shifts affect an increasing share of overall economic activity. Further, major currency fluctuations typically signal problems elsewhere in the financial or economic system. Unfortunately, the authorities frequently find it convenient to stifle these signals rather than tackle the underlying problems. This is the danger inherent in suggestions that the G-3 should focus on guiding the key exchange rates within target zones.

The Louvre accord of February 1987 fell into this trap. The G-3 policymakers at the time resorted to currency-market intervention on a grand scale (see Chart 8) to back up their judgment that the dollar had reached a level consistent with "fundamentals." In fact, the fundamentals themselves were flawed. Even now, more than three years later, the United States has not delivered on its Louvre commitment to curb the federal budget deficit. Nor does Japan's coupling of fiscal stringency with monetary laxity constitute a prudent policy mix for adjustment and stability.

Altogether, by relying on financing as a substitute for adjustment, and by inviting monetary manipulation of the exchange markets, the currency emphasis of the Louvre accord was misplaced. Nor is it yet entirely gone. Last year, the G-3 warned repeatedly of the dangers of dollar strength, and this year those of yen weakness. Exchange rates, however, cannot be decreed at policymakers' whim. At best they can only be influenced through fundamental policy changes.

Much the same error is made by those who believe that controls on international capital flows would quell currency unrest. Such controls would at best address symptoms of problems, not underlying causes. More likely, they would be ineffective. The 1960's U.S. "interest equalization tax" (IET) and capital outflow controls failed to shield the dollar from inflationary U.S. policies. New restrictions, whether as an IET reborn or some kind of transactions tax, would fare no better. Nor is there much to be said for the many restrictions that hamstring foreign investment by insurance companies and pension funds in most jurisdictions. These may curb activities yet neither stabilize markets nor protect investors. Nor again would penalties on short-term in-and-out transactions necessarily nudge investors into decisions congenial to policymakers. Besides, circumvention develops as sophisticated investors switch activities to channels beyond reach of restrictions. Plainly, controls on international capital flows are not the answer.

The central commitment: price stability

Recalling the U.S. policy U-turns of ten years ago, and their disastrous interaction with Latin America's excesses, the first requirement for a successful marriage of free trade and free international capital movement is a high degree of financial stability in the leading economies. Governments must realize that free capital movement multiplies the financial risks and economic costs borne by all when any one of their number pursues ill-considered policies. But, by assuring that resources go to optimal use, capital freedom also multiplies the rewards of policies geared unswervingly to growth

Chart 9

U.S. prices and wages

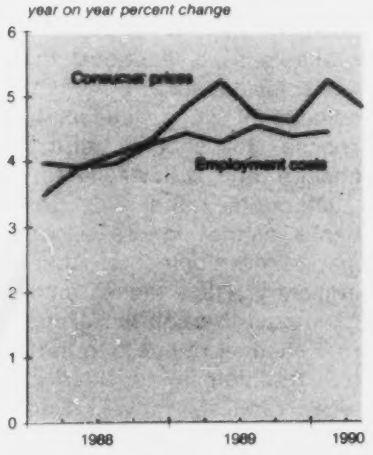
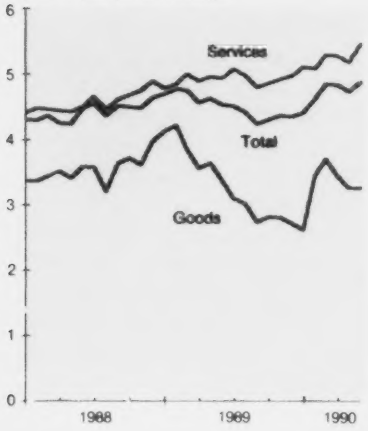


Chart 10

U.S. core inflation

consumer prices excluding food and energy
year on year percent change



with stability.

Trouble is certain if commitment to domestic price discipline comes into question. Among the key countries, Germany's record over the past thirty years manifests convincing commitment, notwithstanding the alarms rung this year at the costs of the East's reconstruction. Japan's record was good during the 1980s, although there are well-founded concerns over asset price inflation and continuing fast money supply growth. By contrast, in the United States, price stability moves in and out of fashion. Its priority has eroded since the Volcker years, whether judged by the up-creep of inflation, especially of labor costs (see Chart 9), or by waning political concern. Surely, it is a sad commentary on U.S. commitment that a Congressional resolution would seek to decree an end to inflation within five years. So distant a target is inadequately demanding of action now. Halving the present 4½% underlying inflation rate within two or three years would be a more concrete aim — and reasonable too, since it need pose no major threat to full employment.*

In every country, the primary burden of inflation control falls on monetary policy. With the United States and Germany as principal exceptions, central banks execute, but Treasuries determine, monetary policy. This works well if the Treasury is fully committed to price stability — as seems true of France today, if not in earlier times — but not if the commitment gets swamped by rival demands. Ideally, perhaps, the central bank should be "independent" — responsible for monetary policy with the single goal of price stability apart from supervisory functions. Of course, accountability provisions limit independence. They could subvert it, to judge from the recurring debate on the Federal Reserve, and are a major issue for the "Eurofed" planned for the monetary union of Europe. Recognizing that no central bank stands wholly free, financial markets worry more when political control jeopardizes price stability. In the end, what counts is not the independence of the central bank *per se* but the rigor of commitment to price stability on the part of all arms of government, including state and local authorities.

Nowhere is this more apparent than in the services sector, where price stability is elusive both in the United States (see Chart 10 and Table 1) and elsewhere. Ranging from babysitting and lawn-mowing through transportation to medical care and

Table 1

U.S. service sector prices

consumer price indices, percent changes at seasonally adjusted annual rates

	1987Q4-1988Q4	*1988Q4-1989Q4*	*1989Q4-1990 June*
All goods and services	4.2	4.6	5.9
excluding food and energy	4.6	4.4	5.3
Selected services			
Homeowner costs	4.7	5.0	5.9
Rents	3.8	4.2	4.2
House maintenance	1.3	3.0	5.5
Hotels	5.2	5.0	7.3
Non-auto transportation	7.8	5.2	4.6
Medical	6.8	8.4	9.1
Entertainment	4.4	5.2	4.4

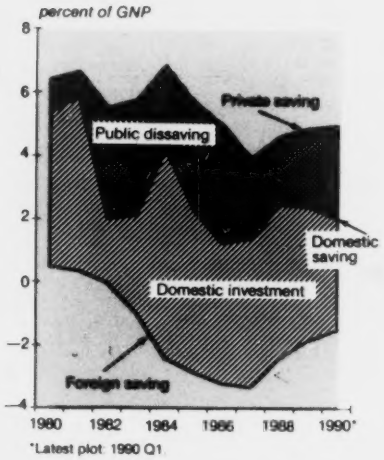
*Federal Reserve Chairman Greenspan would like to see U.S. inflation low enough not to be a factor in business decisions. In principle, high, but stable, inflation may be livable, were it anticipated and the tax code corrected. In practice, even the current pace of *average* inflation makes for unpredictable *relative* prices that damage saving, investment, resource allocation, and economic growth. A literal end to inflation on average, however, would entail absolute declines in many prices, which may be achievable for goods traded in competitive markets, but is too much to hope of administered prices.

funerals, many services face no international competition; are sheltered by barriers to trade across borders and by low mobility of labor even within borders, notably within Europe; or else are protected by regulation — often, but not always, for valid policy reasons.

There has to be greater awareness that government regulation typically loads costs onto the private sector. Cost/benefit review can be particularly cavalier in areas of widening popular concern, such as the environment. The benefits of removing or revamping regulation warrant regular assessment. Up to a point, national governments are responding, but often the real problems lie at state, county, and township levels. Finally, there must be scope to boost services productivity, not least in the United States, by stepping up investment in infrastructure and human capital. Even so, the wage-cost component of most services likely will keep their prices chronically rising relative to those of manufactures. This dims the chances for getting overall inflation down to zero, but should not preclude effective price stability.

Chart 11

U.S. net saving and investment



Coordination and saving for stability and prosperity

The second requirement for harmonious freedom of both international trade and capital flow is G-3 commitment to fiscal adjustment when warranted, superseding the exchange rate management that has been the misguided focus of most G-3 cooperation hitherto.

Over the past twenty years, the major international imbalances have been the product, not of inflation disparities, but of saving and investment shocks. Examples include the OPEC oil shocks of the 1970s, the Reagan fiscal strategy and the collapse of investment in Latin America in the early 1980s, and Europe's investment drive toward 1992. Further shocks lie ahead: for example, with the Cold War over, there loom the transformation of Eastern Europe and, ultimately, of the Soviet Union, plus the revival of Latin America.

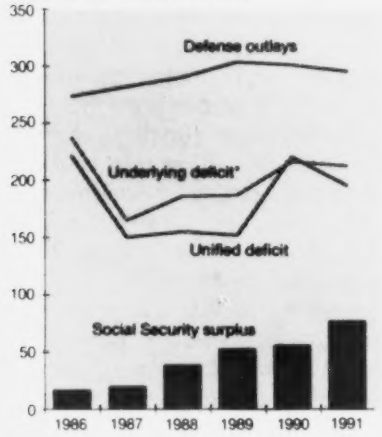
Monetary policy or exchange rate management cannot cope adequately with such shocks. Instead, as U.S. dominance recedes, the sound response lies through fiscal action by the G-3 working together. Granted, fiscal flexibility is hard everywhere and, institutionally, immensely so for the United States. Fiscal coordination also would swell the already large corpus of policymakers at the G-3 conference table. Yet this now is the crucial area for international effort, lest rising global investment drive interest rates still higher.

The first order of business is to clear away the principal unsettled fiscal issue of the 1980s — the U.S. federal deficit opened up by the recession at the start of the decade and the Reagan fiscal program. Though overdone, that program helped propel the U.S. economy into what is, by now, nearly eight years of expansion. The expansion's quality, however, has been marred by inadequate investment and productivity growth, as well as the external deficit — all related to low U.S. saving (see Chart 11). This savings problem has been aggravated by household behavior. Private saving may have risen somewhat since its 1987 nadir, probably reflecting a leveling-off in the wealth-income ratio

Chart 12

U.S. federal budget

billions of dollars, fiscal years



*Unified deficit less FSLIC-related outlays and Social Security surplus.

and a slight pickup in inflation, but neither factor assures a further rise in saving. Nor does the passage of the baby-boom population toward middle age promise much increase in overall personal saving.

The sure way to raise U.S. saving lies through reduced public dissaving (see Chart 12). Despite the rising Social Security surplus, the current trend in the federal deficit is one of renewed deterioration amid a slow economy. The Administration and the Congress are seeking to cut $50-$60 billion from the FY1991 deficit. The key ingredients of a sound compromise would be cuts in military expenditure and middle-class "entitlements"; and higher consumption taxes, given that increases in oil and energy taxes would address conservation and security concerns. The need for action on the energy front is reinforced by the fact that, even as the deficit on non-oil trade shows impressive reduction, U.S. oil import costs are rising fast and this year will contribute some 55% of the overall trade deficit (see Chart 13).

Continued fiscal paralysis would be costly: high interest rates would deter the investment needed to train and equip the U.S. work force for something better than derisory productivity growth; and, far from helping fund the world's new investment opportunities, the U.S. economy would keep draining off $80 billion or more annually from abroad to cover overconsumption at home. Since foreign saving may well be increasingly attracted elsewhere, the danger is that deficit paralysis will eventually bring another stiff rise in U.S. real interest rates. This would leave the economy struggling far below potential growth and susceptible to trade and foreign investment protectionism.

The U.S. saving-investment imbalance is not the only threat to freedom of international trade and capital flow. Japan's current account surplus came down last year to $58 billion, or 2% of GNP. There now is concern, particularly in Japan, that it could slide too far, ostensibly on the grounds that Japan's excess saving adds to a limited pool worldwide.

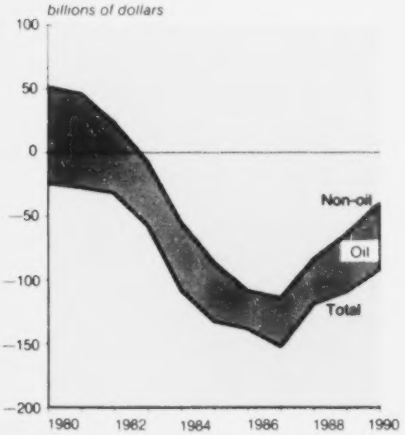
The concern is misdirected. First, unless Japan's government and business continue uncannily successful in managing import growth relative to exports, Japan's surplus will widen anew once the U.S. economy picks up, especially if the yen weakens again under Japan's mix of fiscal surplus and fast money growth; Japan needs to correct this mix even as it works to dismantle its restrictive business practices. Second, if the rationale for a 2%-of-GNP external surplus lies in the investment needs of Eastern Europe and the LDCs, trouble will arise if Japan's capital exports go mainly for asset purchases in North America and Europe. These could stiffen resentment of unbalanced bilateral trade. Worse, reminiscent of recycling after the OPEC oil shocks, U.S. and European investors and intermediaries would wind up carrying a disproportionate share of the risks of investing in the new areas; unlike Saudi Arabia fifteen years ago, Japan today is amply experienced and able to do its part directly.

Europe also has imbalances and attitudes problematic for a liberal world trade and financial order. Britain, Spain, and several smaller countries are in large external deficit, whose main counterpart is West Germany's

Chart 13

U.S. trade balance

billions of dollars



surplus. That surplus should drop as pan-German reconstruction moves into high gear. However, this may burden Germany's EC partners with inflationary pressures and the likely need for tax increases thanks to excess German import demand, possible EMS revaluation of the mark, or both. In effect, by forgoing current consumption, the partners may pick up part of the tab for German unity even as they share in its investment opportunities.

This could complicate Europe's path to economic and monetary union, the goal that largely preoccupies the EC apart from developments to the East. Were EC economic growth in jeopardy or inflation to flare, adjustment costs could escalate and engender actions bringing substance to "Fortress Europe" fears in the world beyond the Community. Relatively liberal attitudes may win out on EC automobile imports and transplant output. But ambivalence lingers on areas such as high technology and broadcasting. And Europe's agriculture protectionism continues dogged; the EC market may open marginally for the products of newly democratizing Eastern Europe, but this will hardly satisfy the United States and others for whom agricultural liberalization is the *sine qua non* of a successful "Uruguay round." EC attitudes are worrisome on investment matters too. They may be liberal on financial institutions and portfolio capital, but are hardly so on "screwdriver" plants and other direct investments seen as circumventing Community trade policy.

The United States, Japan, and Europe should promptly tackle these saving, investment, and structural issues among themselves. If they also commit to monetary discipline, they will be meeting the key requirements to nurture a liberal trade and financial order. This would serve the ultimate goals of market stability and economic prosperity far better than currency manipulation or target zones — current fashions that downplay macroeconomic policy misalignments and make for erratic markets and protectionism toward both trade and capital flows.

Getting to work now on the fundamentals would take best advantage of the global opportunities opening up with the end of the Cold War and the emerging world peace dividend. Though the dividend will not come quickly, and its size remains hostage to security arrangements yet undetermined, the urgency is to ensure that it will not be squandered. The industrial countries no doubt could use the dividend at home. But the new needs of Eastern Europe and — down the road — those of the Soviet Union also loom large. They should not be shrugged off, at least once potential beneficiaries commit to stabilization and structural reforms at home and show capacity to deploy external resources productively.

As their contribution to the redevelopment of the newly democratizing countries, the banks will focus on trade financing and a broad range of advisory work including privatizations and business restructurings. Latin America's experience ten years ago argues that development risks are ill-suited for general-purpose balance of payments financing. Such financing does little to promote economic adjustment. Nor is creditor-imposed conditionality demonstrably effective, even in the case of official financing.

Better for both adjustment and

development would be foreign direct investment. Recognizing the expanding business potential of world economic integration, global corporations set less and less store by national borders. Yet in many host countries, shortsighted and outdated nationalism still obstructs direct investment more than other forms of capital inflow. Fortunately, Eastern Europe's evolving attitudes seem more positive toward direct investment. They recognize the value of the investors' experience, technology, and management know-how — the foundations of a competitive production base for both domestic needs and exports to world markets. The same recognition is beginning to take hold even in Latin America.

Given access, a stable business climate, and globally competitive returns in the host countries, foreign direct investors will step forward. A positive outcome, however, requires stable macropolicies in the major industrial countries too, so that freedom of international capital movement will support, rather than disrupt, free trade and that both will foster financial stability and economic prosperity. These two great freedoms do not themselves come for free.

Statistical appendix

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Information herein is from sources considered to be reliable but is furnished without responsibility on the part of Morgan Guaranty Trust Company.

Editor, D. K. Hargreaves, Vice President
Publications manager, Sorca E. McFadden, Vice President

Effective exchange rates — industrial countries

Index numbers, 1980-82 average=100.

	United States	Canada	Japan	Australia	France	Germany	Italy	United Kingdom	Austria	Belgium	Netherlands	Spain	Switzerland	Denmark	Norway	Sweden
Nominal against 15 other industrial-country currencies																
1985	127.1	92.8	115.9	76.6	85.5	107.8	82.1	88.2	104.2	89.5	104.0	75.5	109.5	95.0	95.6	83.8
1986	106.0	87.6	150.3	61.6	87.4	116.2	82.8	80.7	107.8	92.9	110.4	73.4	118.1	99.7	98.3	81.5
1987	94.1	89.6	164.3	58.3	87.1	122.0	82.2	78.9	110.8	95.6	114.6	73.0	123.0	102.8	85.7	80.0
1988	88.0	95.6	181.4	62.0	85.7	121.8	79.8	83.7	110.2	94.6	114.4	75.5	121.9	101.2	85.6	80.2
1989	91.3	100.5	172.7	65.6	84.9	121.1	80.6	81.3	110.0	94.2	113.6	78.8	115.8	99.0	85.8	81.1
1989																
July	92.0	100.2	170.1	63.1	84.7	120.8	81.2	81.1	109.8	94.2	113.5	78.9	116.8	98.9	85.7	81.3
August	92.5	101.6	170.0	64.2	84.7	120.2	81.5	80.5	109.6	93.9	113.2	78.7	116.3	98.5	85.8	81.5
September	93.8	101.2	166.3	65.8	84.7	120.2	81.3	80.1	109.4	93.9	113.1	78.6	115.9	98.4	85.8	81.7
October	91.8	101.5	167.6	64.9	85.5	122.0	80.6	78.7	110.5	94.5	114.2	78.6	116.1	99.6	85.6	81.3
November	91.4	101.9	165.2	65.6	85.9	122.9	81.0	77.0	111.0	95.2	115.0	79.1	115.6	101.0	85.4	80.7
December	89.7	102.2	162.6	65.0	86.8	125.0	81.1	75.6	111.8	96.3	116.4	79.4	114.9	102.8	85.3	79.6
1990																
January	89.0	100.9	159.5	64.0	87.5	125.4	81.0	76.6	112.3	96.6	116.7	79.4	116.0	103.5	85.4	79.3
February	89.1	98.7	158.3	61.9	87.5	125.1	81.3	78.1	112.1	96.8	116.5	79.6	117.1	103.8	85.4	79.2
March	90.6	100.6	151.4	63.1	87.9	124.9	81.8	75.8	112.1	97.3	116.6	80.1	117.2	104.6	85.3	80.0
April	90.4	101.9	145.7	64.0	88.4	124.9	82.1	75.7	112.2	97.8	116.7	81.1	118.2	105.3	85.2	79.9
May	89.4	100.7	149.0	62.8	88.0	124.7	82.0	76.4	111.8	97.8	116.6	82.3	122.0	105.3	85.2	79.5
June	89.4	100.8	149.3	64.2	87.5	123.9	81.6	78.5	111.4	97.7	115.8	82.9	122.3	104.6	85.3	79.3
Real against 15 other industrial-country currencies																
1985	122.4	96.4	96.9	89.6	100.5	96.7	100.2	92.8	103.3	85.2	96.6	92.4	98.0	101.3	99.7	96.8
1986	102.4	93.6	115.4	79.7	103.5	103.5	102.9	87.4	106.8	84.8	101.3	94.2	106.0	107.8	97.7	96.2
1987	91.8	96.8	119.5	81.9	104.7	106.9	103.8	87.4	106.9	84.7	104.2	96.2	110.1	112.1	100.9	95.7
1988	87.4	104.7	125.8	91.3	102.1	106.2	104.2	94.2	107.6	81.5	100.7	100.8	107.1	112.0	102.0	99.2
1989	91.8	108.2	118.2	98.1	100.1	104.7	107.7	93.6	107.2	80.3	97.5	106.5	100.3	110.4	101.5	104.7
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August	92.8	109.2	117.2	96.2	100.1	103.8	108.8	92.9	108.6	80.2	96.3	106.8	100.5	109.9	100.8	105.7
September	94.1	108.3	114.7	99.3	100.0	103.7	108.7	92.8	106.6	80.0	96.8	106.7	100.4	110.3	101.5	105.8
October	92.7	107.8	114.6	97.8	100.8	105.2	107.7	91.3	107.6	80.4	97.8	106.6	100.8	111.9	101.1	105.2
November	92.2	108.2	113.0	99.6	101.4	105.8	108.3	89.8	108.1	81.0	98.3	107.7	100.2	113.9	100.7	104.9
December	90.6	107.9	111.3	98.5	102.7	107.4	108.4	88.4	109.4	81.7	99.3	108.3	99.3	115.8	100.2	103.9
1990																
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February	90.0	104.2	107.4	93.6	102.7	107.5	107.9	92.3	110.3	83.4	98.1	110.0	102.1	116.0	102.2	103.6
March	91.5	105.7	103.2	95.1	103.5	107.1	108.1	89.8	109.9	83.6	98.8	110.6	102.5	117.2	101.8	104.3
April	91.3	106.7	99.5	96.3	103.9	107.1	108.2	90.1	110.0	83.9	99.6	112.4	103.4	117.9	100.4	103.9
May	90.1	105.7	101.1	94.6	103.3	106.8	107.6	91.1	109.4	84.5	99.5	114.0	107.0	118.4	101.7	103.8
June	90.0	105.8	101.5	96.7	102.8	106.3	106.8	93.5	109.6	83.9	99.2	115.0	107.1	117.2	102.0	103.3
Real against 18 other industrial-country and 22 LDC currencies																
1985	124.2	99.2	102.0	90.2	100.0	95.8	99.8	92.4	102.9	84.5	94.8	93.1	97.8	101.3	100.0	96.7
1986	108.1	94.8	120.2	81.6	104.2	104.7	104.4	88.3	107.8	85.4	101.3	96.8	107.9	108.4	98.5	97.0
1987	98.1	97.1	123.4	83.4	106.0	109.4	106.5	89.2	110.6	85.9	105.3	99.8	113.1	113.1	102.0	97.1
1988	92.8	104.4	129.0	92.5	102.8	107.6	106.1	95.6	108.8	82.3	101.1	103.7	109.2	112.8	103.0	100.2
1989	96.8	108.3	121.7	98.8	100.4	105.2	109.0	94.2	107.9	80.4	97.1	109.3	101.8	110.8	102.1	104.8
1989																
July	97.4	107.9	121.0	95.1	100.3	105.1	110.1	94.1	109.5	80.6	96.0	109.8	102.6	110.4	101.8	105.1
August	97.8	109.4	120.7	96.6	100.3	104.2	110.0	93.1	109.2	80.3	95.8	109.5	102.0	110.3	101.4	105.7
September	98.6	108.6	118.2	99.5	100.1	103.9	109.7	93.2	107.1	80.0	96.2	109.2	101.7	110.7	102.0	105.7
October	97.5	108.0	117.9	98.3	101.0	105.7	109.0	91.9	108.2	80.7	97.5	109.3	102.4	112.2	101.5	105.2
November	96.8	108.2	116.0	99.9	101.7	106.4	109.7	90.3	108.8	81.3	98.1	110.5	101.9	114.3	101.2	104.9
December	95.5	107.9	114.0	99.0	103.3	108.6	110.3	89.1	110.3	82.2	99.6	111.6	101.4	116.3	100.7	104.0
1990																
January	94.8	105.8	110.9	97.6	103.7	109.0	110.0	91.3	111.2	83.5	98.5	112.2	102.6	116.2	101.9	104.5
February	94.6	104.0	109.5	94.4	103.5	109.0	110.1	93.3	111.5	84.1	98.8	113.5	104.2	116.7	102.7	104.0
March	95.4	105.5	104.9	95.5	104.1	108.5	110.0	90.6	111.1	84.3	99.3	113.6	104.5	117.8	102.2	104.5
April	95.6	106.7	101.3	96.8	104.9	108.8	110.5	91.1	111.3	84.8	100.4	115.8	105.6	118.5	100.8	104.2
May	94.6	105.6	102.8	95.3	104.3	108.7	110.0	92.4	110.8	85.4	100.4	117.4	109.4	119.1	102.2	104.3
June	93.7	105.4	102.6	97.1	103.4	107.6	108.6	94.5	110.7	84.7	99.8	117.5	108.9	117.8	102.3	103.5

Real effective exchange rates — developing countries

Index numbers, 1980-82 average=100.

	Argentina	Brazil	Chile	Colombia	Mexico	Peru	Venezuela	Hong Kong	Indonesia	Korea	Malaysia	Philippines	Singapore	Taiwan	Israel	Turkey
1985	71.0	85.2	79.6	86.1	87.4	96.8	93.0	103.6	94.7	89.4	116.3	114.7	95.7	94.2	106.6	89.8
1986	61.0	74.8	68.8	68.0	62.8	97.2	90.7	93.9	53.6	76.4	95.4	90.9	80.9	86.3	101.0	71.6
1987	53.7	74.2	65.6	63.6	64.6	109.0	65.2	89.9	56.1	75.6	89.5	87.7	74.5	91.7	97.6	63.5
1988	59.8	81.3	60.6	61.4	76.8	130.2	72.0	90.6	54.0	82.3	80.4	89.5	73.2	95.2	107.1	64.8
1989	51.7	99.1	62.2	60.7	73.7	140.2	63.2	98.8	55.7	92.3	79.9	95.6	78.1	100.6	109.3	73.5
1989																
July	49.4	93.6	61.6	61.3	73.4	118.7	63.6	98.3	56.0	93.3	81.7	93.8	78.4	102.3	107.6	77.1
August	48.6	103.0	61.4	61.5	72.8	121.4	62.7	98.7	56.8	93.7	82.2	96.6	78.5	103.0	108.8	78.1
September	49.3	112.8	61.6	61.0	72.6	130.0	62.3	101.2	57.4	94.6	82.1	99.2	78.5	103.2	109.5	78.5
October	48.8	114.4	60.9	59.6	71.7	143.0	58.6	100.5	56.3	92.9	80.7	100.8	77.8	101.0	108.5	76.7
November	49.2	119.4	59.7	58.9	71.1	168.2	54.3	102.1	56.4	92.5	80.2	98.5	79.0	99.4	108.7	77.1
December	41.6	118.0	58.9	57.3	70.0	203.8	53.2	101.0	56.7	90.9	78.8	97.0	78.2	97.8	108.1	77.4
1990																
January	44.5	128.7	57.4	57.1	69.1	221.4	53.6	97.5	55.6	88.7	78.0	93.6	79.2	97.1	106.8	77.7
February	39.5	131.0	59.1	57.0	68.5	231.0	54.9	97.4	55.9	87.6	77.6	92.0	80.4	96.4	106.1	77.2
March	50.9	149.3	57.8	57.0	68.6	227.7	55.7	100.1	56.6	88.0	78.5	92.7	80.6	96.3	105.0	78.5
April	52.5	131.2	59.2	56.5	68.8	225.5	53.7	100.9	57.4	87.9	78.2	92.0	80.9	96.0	106.7	78.0
May	57.1	125.2	58.8	55.2	68.2	207.0	52.4	101.5	58.7	87.3	78.0	91.9	81.2	91.6	106.0	76.0
June	79.3	168.4	56.5	54.3	67.3	196.8	50.7	101.1	57.0	85.7	77.7	92.7	81.0	89.7	104.4	77.2

J.P. Morgan Government Bond Index

Index of total return for traded bonds, December 31, 1987=100
end of month

	1988	1989	1989				1990						
	Dec	Dec	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul 18
In local currencies													
Australia	109.77	124.83	116.76	118.57	122.28	124.83	127.16	125.88	126.69	126.49	129.15	131.14	133.12
Belgium	108.72	110.91	113.05	112.08	110.85	110.91	109.44	108.64	112.99	113.00	115.22	116.35	118.11
Canada	109.08	122.99	118.98	121.87	121.22	122.99	122.02	118.30	116.57	115.13	120.31	122.21	122.80
France	116.24	121.06	121.63	121.55	121.26	121.06	120.33	119.20	122.71	123.66	124.47	125.68	126.88
Germany	105.23	106.26	106.50	106.23	105.28	106.26	104.33	100.99	102.78	101.87	103.05	104.16	105.89
Italy	111.62	125.01	121.59	122.37	123.26	125.01	126.17	127.34	129.14	131.21	134.11	135.80	136.50
Japan	105.89	104.30	106.09	104.88	104.80	104.30	100.44	99.59	98.34	99.27	102.10	100.99	101.41
Netherlands	106.02	105.84	106.44	106.30	105.43	105.84	104.64	102.59	104.02	103.66	104.75	105.87	107.40
Spain	109.76	119.82	118.47	119.25	119.66	119.82	122.24	122.40	123.77	125.61	127.21	128.66	129.56
United Kingdom	106.74	115.29	112.19	113.52	112.75	115.29	112.58	110.90	108.42	106.24	112.53	116.26	116.25
United States	106.78	121.70	117.36	120.32	121.45	121.70	120.06	120.32	120.33	119.34	122.49	124.35	124.61
In dollars													
Australia	129.84	136.50	125.63	128.58	132.78	136.50	135.54	132.35	132.41	131.41	137.39	143.96	145.52
Belgium	96.23	102.74	94.52	95.61	97.64	102.74	102.36	101.45	105.96	107.43	109.03	112.24	114.79
Canada	118.89	138.06	131.34	134.92	135.40	138.06	133.65	128.91	129.46	128.42	133.34	136.34	138.32
France	102.22	111.33	101.81	103.65	106.03	111.33	111.69	109.97	114.60	116.65	115.65	119.60	122.01
Germany	93.36	98.56	89.21	90.68	92.74	98.56	97.11	92.92	95.34	95.11	95.32	98.26	100.80
Italy	96.97	114.27	103.15	105.14	108.79	114.27	116.73	117.20	120.10	123.54	124.88	128.88	131.10
Japan	102.63	87.70	92.20	89.03	88.74	87.70	84.17	80.88	75.35	75.53	81.21	80.27	83.10
Netherlands	93.65	97.90	88.88	90.45	92.66	97.90	97.16	94.33	96.37	96.81	96.82	99.83	102.02
Spain	103.93	117.52	106.86	109.79	111.57	117.52	120.50	120.78	122.06	127.15	129.99	134.89	138.50
United Kingdom	102.47	98.66	96.13	95.10	93.83	98.66	100.27	98.96	94.74	92.26	100.21	107.75	111.94
United States	106.78	121.70	117.36	120.32	121.45	121.70	120.06	120.32	120.33	119.34	122.49	124.35	124.61
Global	104.99	112.14	108.47	109.87	110.85	112.14	110.47	109.28	108.61	108.19	111.65	113.67	115.15
Global excluding United States	101.79	99.25	96.48	95.98	96.76	99.25	97.57	94.79	93.35	93.57	97.29	99.40	102.15

Government bond yields

by maturity sectors in years, for traded bonds included in the J.P. Morgan Government Bond Index
in percent per annum (semiannual basis), at end of month

	1988	1989	1989				1990						
	Dec	Dec	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul 18
Australia													
1-3	13.78	14.30	15.48	15.49	14.73	14.30	13.61	14.23	14.22	14.42	14.15	14.05	13.75
3-5	13.71	13.57	14.82	14.68	13.99	13.57	13.22	13.86	13.92	14.26	13.96	13.79	13.52
5-7	13.34	13.39	14.38	14.28	13.74	13.39	13.19	13.73	13.83	14.21	13.95	13.81	13.55
7-10	13.08	13.01	13.91	13.79	13.28	13.01	12.89	13.41	13.59	13.91	13.63	13.52	13.31
10+	13.00	12.87	13.65	13.50	13.00	12.87	12.75	13.27	13.44	13.79	13.55	13.39	13.18
Belgium													
<5	7.82	9.74	8.62	9.08	9.69	9.74	10.28	10.55	9.78	9.94	9.62	9.56	9.32
5+	8.00	9.44	8.42	8.80	9.23	9.44	9.98	10.41	9.66	9.85	9.59	9.53	9.30
Canada													
1-3	10.60	10.64	10.34	10.07	10.69	10.64	10.58	11.99	12.48	12.79	12.13	11.79	11.66
3-5	10.38	10.05	10.10	9.91	10.26	10.05	10.21	11.39	11.89	12.40	11.60	11.35	11.20
5-7	10.24	9.76	9.95	9.64	9.92	9.76	10.03	11.00	11.60	12.18	11.37	11.14	11.08
7-10	10.22	9.65	9.83	9.55	9.79	9.65	10.00	10.77	11.30	11.76	11.02	10.86	10.84
10+	10.21	9.51	9.78	9.40	9.61	9.51	9.89	10.49	10.98	11.45	10.68	10.61	10.69
France													
1-3	8.16	10.01	8.94	9.39	9.52	10.01	10.18	10.32	9.93	9.60	9.69	9.62	9.50
3-5	8.32	9.65	8.88	9.20	9.32	9.65	9.93	10.21	9.78	9.61	9.66	9.59	9.48
5-7	8.26	9.32	8.75	8.99	9.13	9.32	9.62	10.00	9.51	9.45	9.50	9.47	9.34
7-10	8.38	9.12	8.64	8.75	8.98	9.12	9.44	9.86	9.37	9.42	9.42	9.38	9.28
10+	8.57	9.14	8.76	8.82	9.03	9.14	9.42	9.81	9.40	9.51	9.56	9.51	9.39
Germany													
<5	5.87	7.57	7.15	7.40	7.66	7.57	8.01	8.74	8.60	8.87	8.76	8.63	8.43
5-7	6.21	7.48	7.07	7.27	7.61	7.48	7.99	8.75	8.62	8.89	8.82	8.71	8.47
7+	6.44	7.33	6.95	7.09	7.39	7.33	7.81	8.67	8.40	8.77	8.70	8.61	8.30
Italy													
1-3	11.40	13.53	13.42	13.60	13.69	13.53	13.63	13.72	13.52	13.35	12.79	12.65	12.70
3+	12.74	13.78	13.37	13.66	13.90	13.78	13.89	13.89	13.79	13.48	13.01	12.90	13.06
Japan													
1-3	3.88	6.04	5.23	5.64	5.91	6.04	6.61	6.87	7.24	7.04	6.59	6.89	7.00
3-5	3.94	5.95	5.15	5.55	5.82	5.95	6.51	6.72	7.07	6.93	6.46	6.80	6.79
5-7	4.04	5.75	4.99	5.33	5.49	5.75	6.48	6.68	7.15	7.04	6.53	6.86	6.87
7-10	4.62	5.56	5.06	5.33	5.39	5.56	6.46	6.76	7.02	7.02	6.60	6.88	6.82
10+	4.94	5.54	5.12	5.33	5.39	5.54	6.25	6.33	6.76	6.72	6.35	6.61	6.65
Netherlands													
1-3	5.99	8.42	7.45	7.79	8.19	8.42	8.54	9.26	8.94	9.06	8.88	8.81	8.63
3-5	6.07	7.91	7.34	7.53	7.88	7.91	8.31	8.95	8.78	8.94	8.84	8.77	8.52
5-7	6.13	7.84	7.27	7.42	7.78	7.84	8.24	8.86	8.66	8.86	8.81	8.72	8.52
7+	6.34	7.71	7.20	7.36	7.66	7.71	8.15	8.70	8.58	8.81	8.78	8.69	8.47
Spain													
1-3	12.78	14.46	13.47	13.63	13.92	14.46	13.97	14.39	14.43	14.26	14.23	14.16	14.05
3+	11.79	13.77	12.93	13.32	13.32	13.77	13.47	13.97	14.04	13.99	13.93	13.92	13.97
United Kingdom													
1-3	11.32	12.38	12.42	11.98	12.52	12.38	12.83	13.30	13.94	14.37	13.17	12.75	12.74
3-5	10.72	11.24	11.34	11.11	11.52	11.24	11.92	12.37	13.09	13.65	12.43	11.98	12.08
5-7	10.58	11.06	11.12	10.97	11.34	11.06	11.71	12.13	12.71	13.36	12.21	11.76	11.88
7-10	10.23	10.59	10.64	10.58	10.88	10.59	11.28	11.76	12.46	13.14	12.12	11.62	11.75
10+	9.79	10.17	10.15	10.15	10.43	10.17	10.79	11.26	11.94	12.53	11.66	11.19	11.30
United States													
1-3	9.14	7.90	8.46	7.92	7.78	7.90	8.30	8.36	8.61	8.93	8.43	8.23	8.11
3-5	9.15	7.92	8.43	7.91	7.81	7.92	8.39	8.49	8.72	9.06	8.58	8.36	8.30
5-7	9.19	7.98	8.40	7.95	7.84	7.98	8.43	8.54	8.71	9.08	8.63	8.44	8.43
7-10	9.18	7.99	8.37	7.97	7.89	7.99	8.45	8.55	8.70	9.07	8.63	8.46	8.51
10+	9.11	8.08	8.38	8.02	7.99	8.08	8.56	8.66	8.78	9.14	8.71	8.52	8.66

Eurocurrency deposit rates

by country of currency, by maturity in months
prime banks' bid rates, at or near end of month

	Dec	Dec	1989			1990					
	1987	1988	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Australia											
1	10.25	14.63	17.89	17.86	17.38	16.75	15.97	15.25	14.75	14.64	14.88
3	10.81	15.25	18.09	17.75	17.13	16.25	15.75	15.25	14.75	14.73	14.88
6	11.56	15.48	18.09	17.38	16.61	15.83	15.63	15.13	14.92	14.75	14.88
12	12.44	15.56	18.06	17.22	16.22	15.61	15.63	15.25	15.22	15.13	14.95
Belgium											
1	6.75	7.31	9.63	9.81	10.13	10.33	10.44	10.19	9.88	9.75	9.38
3	6.87	7.44	9.63	9.94	10.13	10.56	10.50	10.19	10.13	9.88	9.38
6	6.87	7.50	9.50	9.94	10.13	10.63	10.69	10.19	10.25	10.75	9.38
12	7.00	7.50	9.38	9.94	10.19	10.63	10.81	10.19	10.31	10.75	9.38
Canada											
1	8.00	10.13	12.00	11.88	12.00	12.50	12.31	13.13	13.13	13.38	13.13
3	8.12	10.63	11.75	11.88	12.00	12.19	12.19	13.31	13.44	13.38	13.19
6	8.44	11.00	11.75	11.88	11.88	11.94	11.75	13.31	13.56	13.13	13.19
12	8.87	11.13	11.50	11.75	11.63	11.63	11.63	13.31	13.75	12.88	12.94
France											
1	8.75	8.56	10.19	10.38	11.00	10.50	10.38	10.06	9.56	9.75	9.88
3	9.00	8.63	10.13	10.63	11.19	10.88	10.75	10.31	9.56	9.81	10.00
6	9.25	8.63	10.06	10.63	11.25	11.00	11.00	10.38	9.81	10.00	10.13
12	9.25	8.75	9.94	10.56	11.06	11.13	11.25	10.69	9.94	10.19	10.25
Germany											
1	3.25	5.25	7.94	8.06	8.13	7.88	8.31	7.75	7.94	7.88	8.00
3	3.37	5.31	8.13	8.13	8.19	8.13	8.44	8.06	8.25	8.13	8.19
6	3.50	5.50	8.13	8.19	8.25	8.38	8.81	8.44	8.63	8.38	8.44
12	3.75	5.56	8.00	8.25	8.38	8.56	9.19	8.75	9.06	8.81	8.69
Italy											
1	11.37	11.25	12.13	12.38	12.38	12.50	12.38	11.13	11.25	11.38	10.63
3	11.75	11.63	12.38	12.50	12.50	12.50	12.50	11.75	11.38	11.38	10.88
6	11.87	11.88	12.38	12.50	12.50	12.63	12.75	12.25	11.75	11.50	11.00
12	12.00	12.13	12.50	12.69	13.00	13.13	13.13	12.94	12.50	11.88	11.38
Japan											
1	4.00	4.44	6.19	6.63	6.56	6.63	7.06	7.19	7.13	7.25	7.38
3	4.12	4.56	6.38	6.56	6.75	6.94	7.25	7.31	7.25	7.25	7.44
6	4.12	4.50	6.38	6.56	6.81	7.06	7.38	7.50	7.44	7.31	7.56
12	4.12	4.63	6.38	6.50	6.75	7.13	7.44	7.69	7.50	7.31	7.69
Netherlands											
1	4.50	5.69	8.13	8.19	8.56	8.50	8.69	8.81	8.31	8.00	7.94
3	4.62	5.69	8.13	8.31	8.56	8.69	8.88	8.88	8.56	8.13	8.13
6	4.69	5.75	8.19	8.31	8.56	8.75	9.06	8.88	8.81	8.38	8.38
12	4.81	5.75	8.13	8.31	8.56	8.88	9.25	8.94	9.13	8.69	8.63
Switzerland											
1	2.50	4.63	7.69	7.63	9.25	9.50	9.06	8.88	9.25	8.69	8.94
3	3.00	4.69	7.81	7.81	9.00	9.56	9.19	8.88	9.25	8.69	8.88
6	3.19	4.81	7.81	7.81	8.69	9.50	9.19	8.88	9.25	8.38	8.75
12	3.25	4.81	7.69	7.75	8.50	9.31	9.25	8.88	9.25	8.50	8.31
United Kingdom											
1	8.56	12.88	15.19	15.06	15.00	15.00	15.00	14.94	15.00	15.06	14.88
3	8.81	13.06	15.25	15.13	15.06	15.06	15.06	15.19	15.25	15.13	14.88
6	9.00	13.06	15.13	15.00	14.88	15.00	15.13	15.38	15.50	15.13	14.69
12	9.31	12.81	14.56	14.63	14.56	14.88	15.19	15.50	15.88	15.00	14.56
United States											
1	7.06	9.06	8.63	8.63	8.31	8.19	8.25	8.25	8.38	8.19	8.19
3	7.37	9.19	8.56	8.38	8.25	8.25	8.25	8.38	8.56	8.25	8.25
6	7.50	9.31	8.38	8.19	8.13	8.31	8.31	8.63	8.75	8.38	8.25
12	7.81	9.50	8.31	8.06	8.13	8.56	8.56	8.81	9.13	8.63	8.31
European currency unit											
1	6.62	7.94	10.69	10.81	11.06	10.75	10.69	9.69	10.25	10.06	10.06
3	6.75	8.00	10.69	10.81	11.19	11.00	11.06	10.50	10.56	10.19	10.25
6	6.87	8.13	10.69	10.88	11.31	11.91	11.44	10.50	10.88	10.44	10.44
12	7.00	8.13	10.56	10.75	11.19	11.25	11.63	10.94	11.06	10.63	10.69

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